

Public Meeting No. 2: CSO Control Plans Update Typical Year Development, Goals & Priorities

December 15th, 2022



zoom



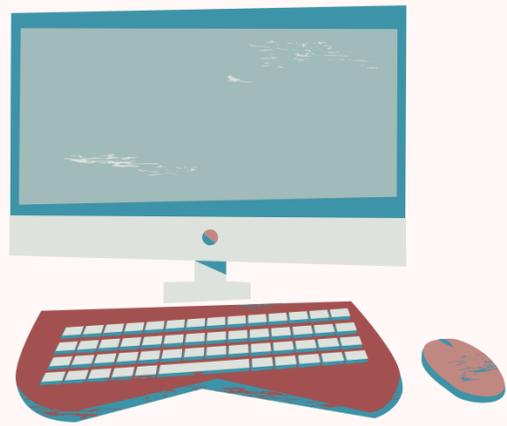
Interpretation



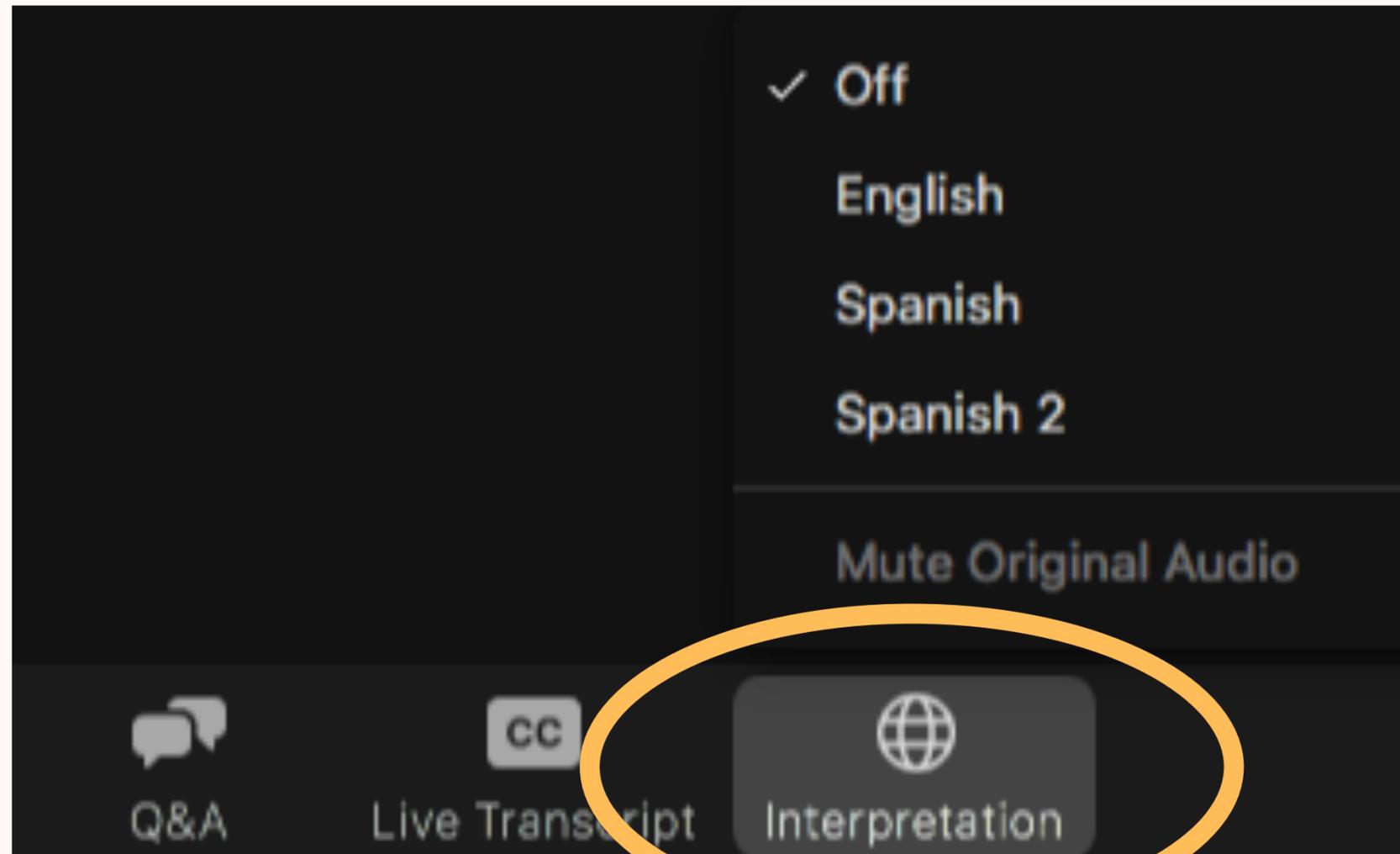
SOMER VIVA

OFFICE OF
IMMIGRANT
AFFAIRS

WE SPEAK YOUR LANGUAGE
HABLAMOS SU IDIOMA
FALAMOS A SUA LINGUA
NOU PALE LANG OU
हामी तपाईंको भाषा बोल्दछौं।
我们会说您的语言



Interpretation on a computer

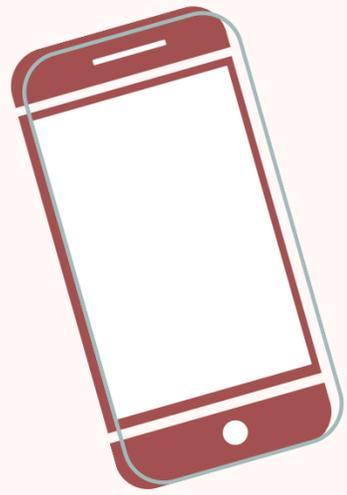


Click on the globe symbol in the bottom right corner of your screen.

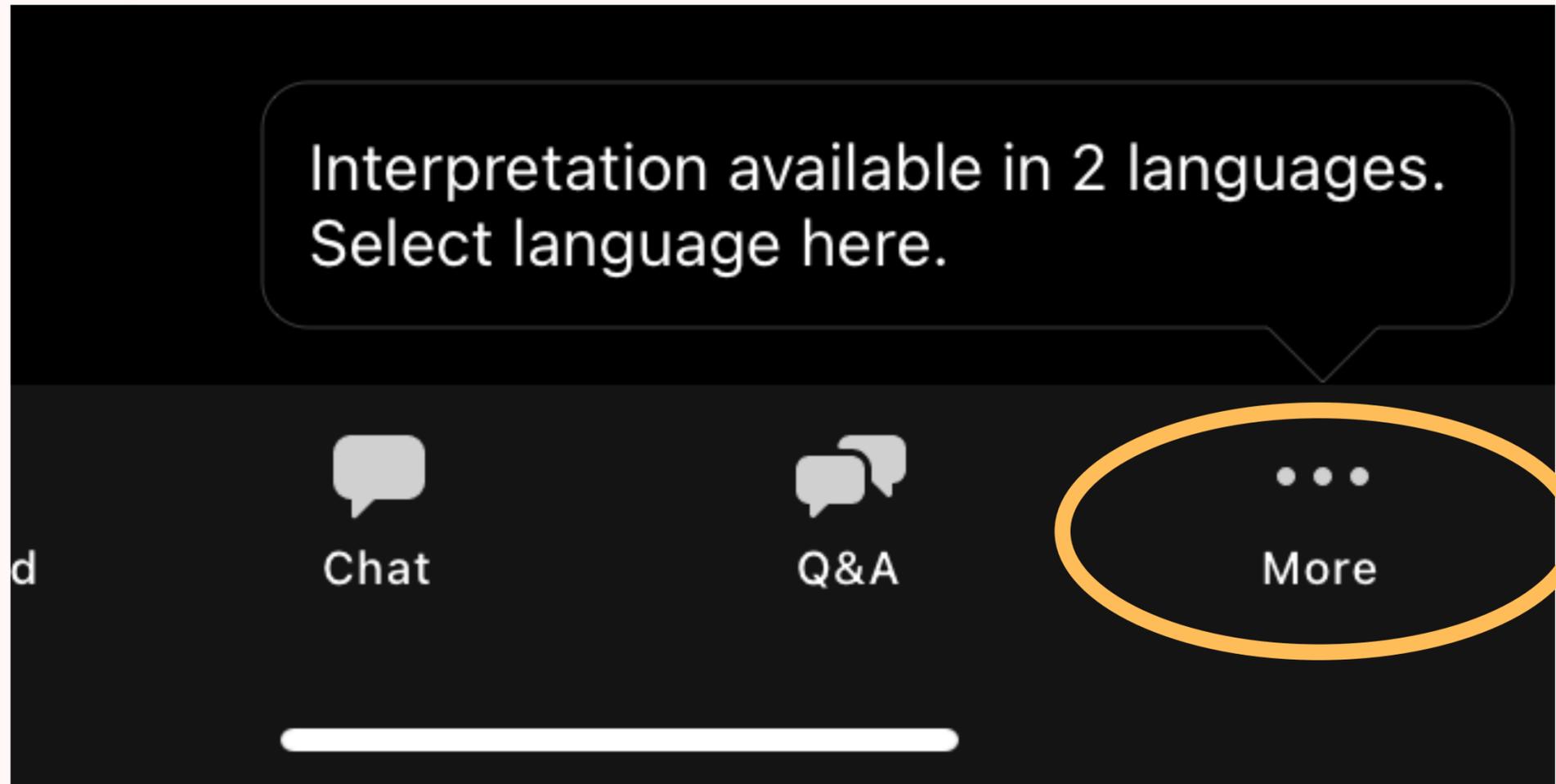


A screenshot of a video conference control bar. The 'Interpretation' button is highlighted, and its menu is open, showing options: 'Off' (checked), 'English', 'Spanish', and 'Spanish 2'. A yellow arrow points to the 'Spanish' option. Below the menu is the 'Mute Original Audio' option. The bottom bar contains icons for 'Raise Hand', 'Q&A', 'Live Transcript', and 'Interpretation'.

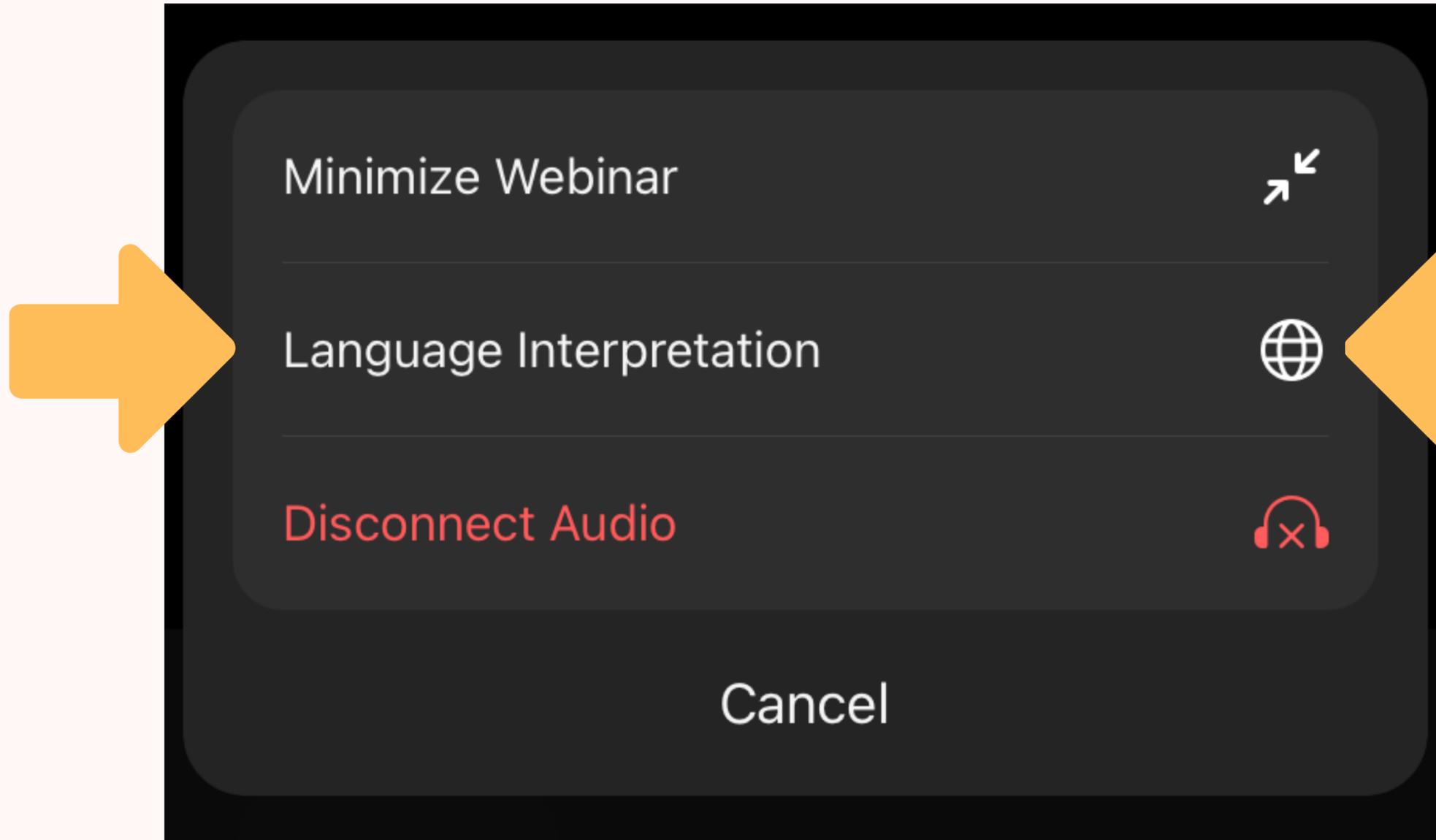
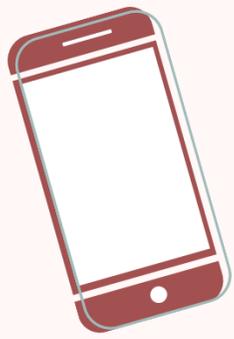
Select the option for the language you speak.



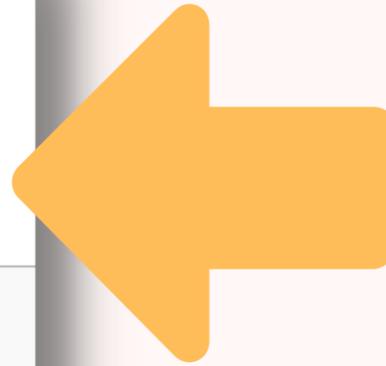
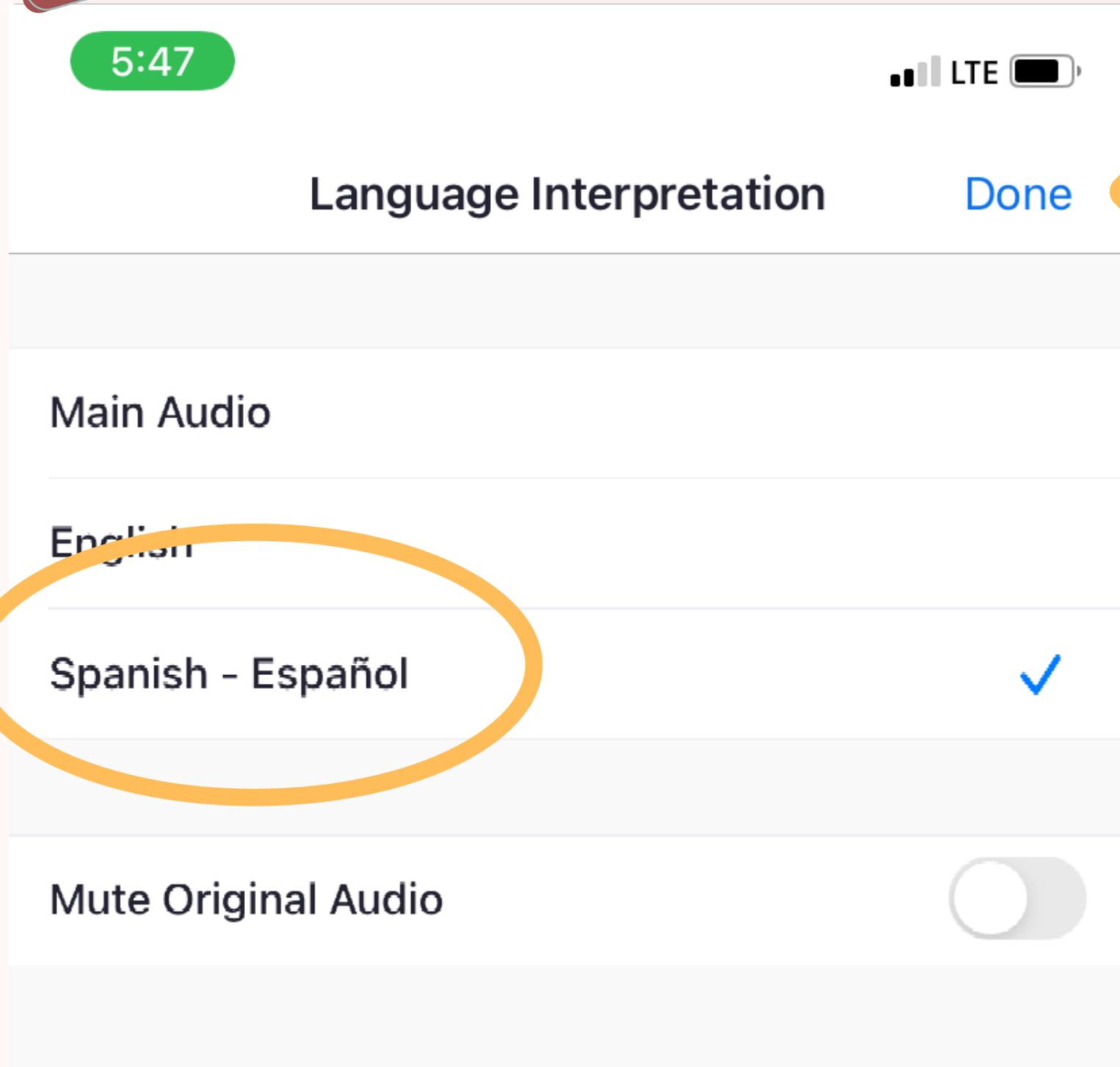
Interpretation on a smartphone



Click on the three dots in the bottom right corner of your screen.

A dark grey, rounded rectangular menu with a black background. It contains four options: 'Minimize Webinar' with a white minimize icon (two arrows pointing outwards), 'Language Interpretation' with a white globe icon, 'Disconnect Audio' with a red headphones icon and a red 'x' over it, and 'Cancel' at the bottom. A large yellow arrow points from the left towards the 'Language Interpretation' option.

Select the option with the globe symbol.



Select your language. Press "Done" in the top right corner.

zoom



Interpretation



SOMER VIVA

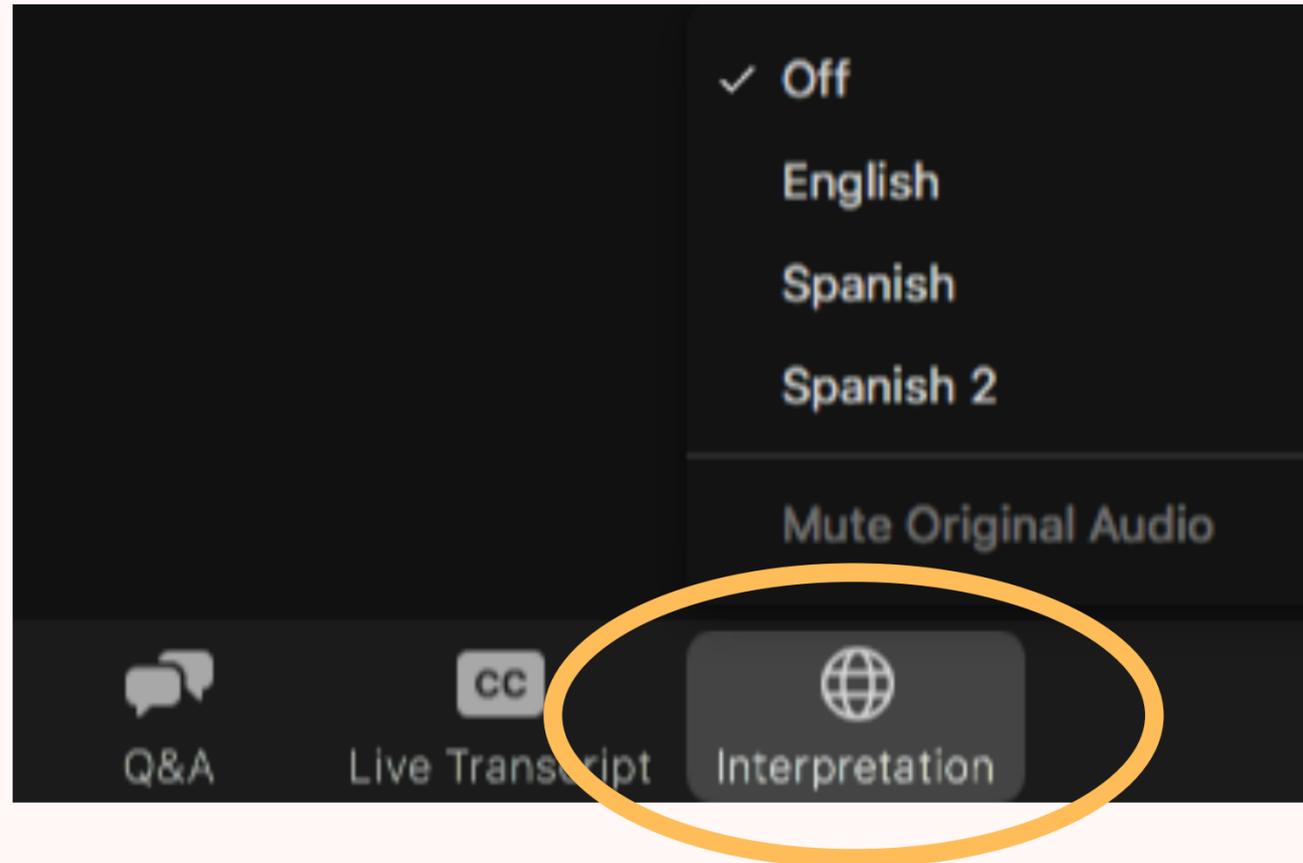
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Interpretation on a computer Interpretación en una computadora

1

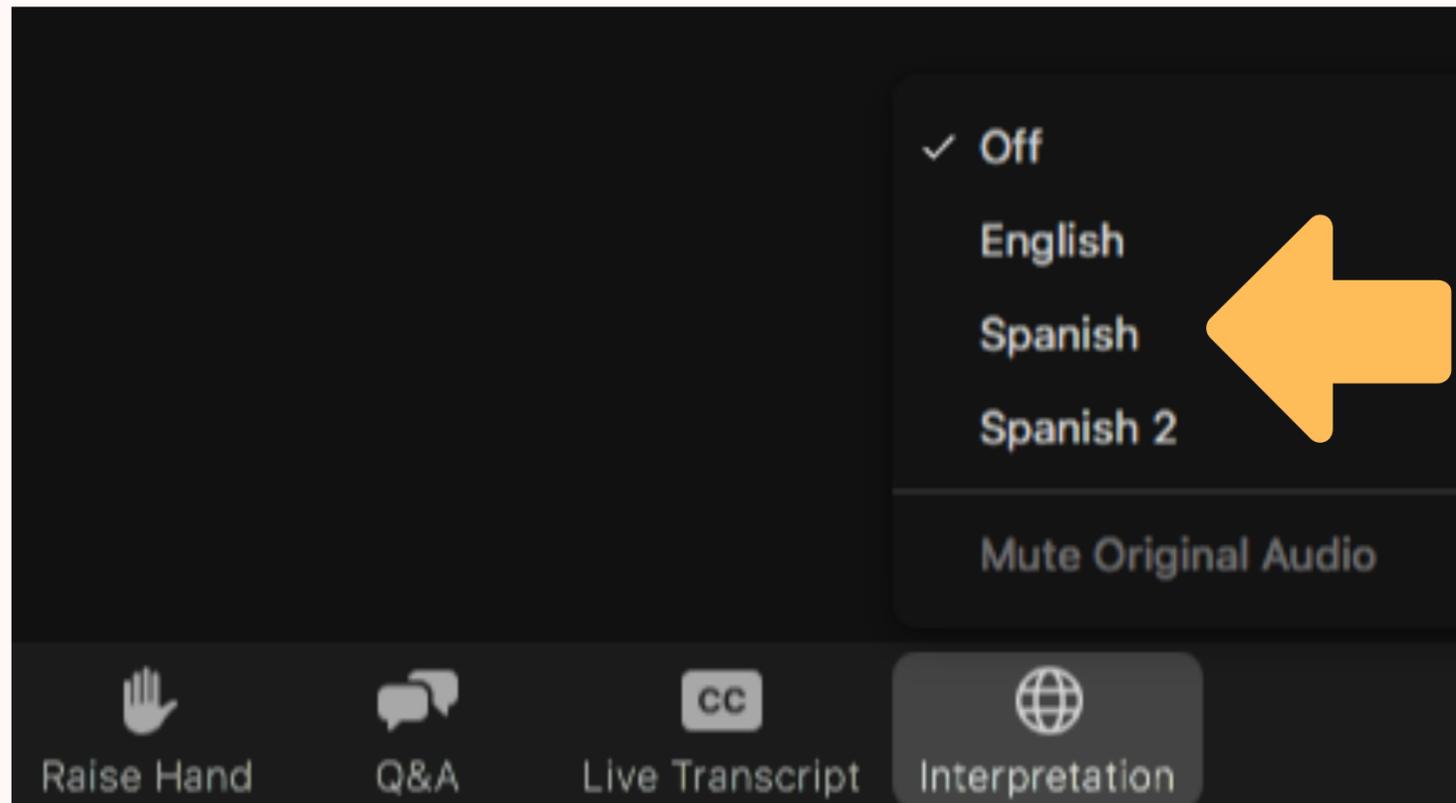


Click on the globe symbol in the bottom right corner of your screen.

Haga clic en el globo terráqueo ubicado en la esquina derecha abajo de su pantalla.

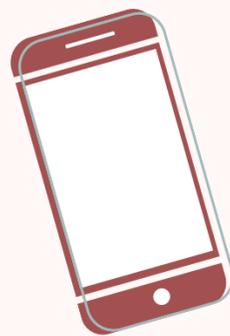


2



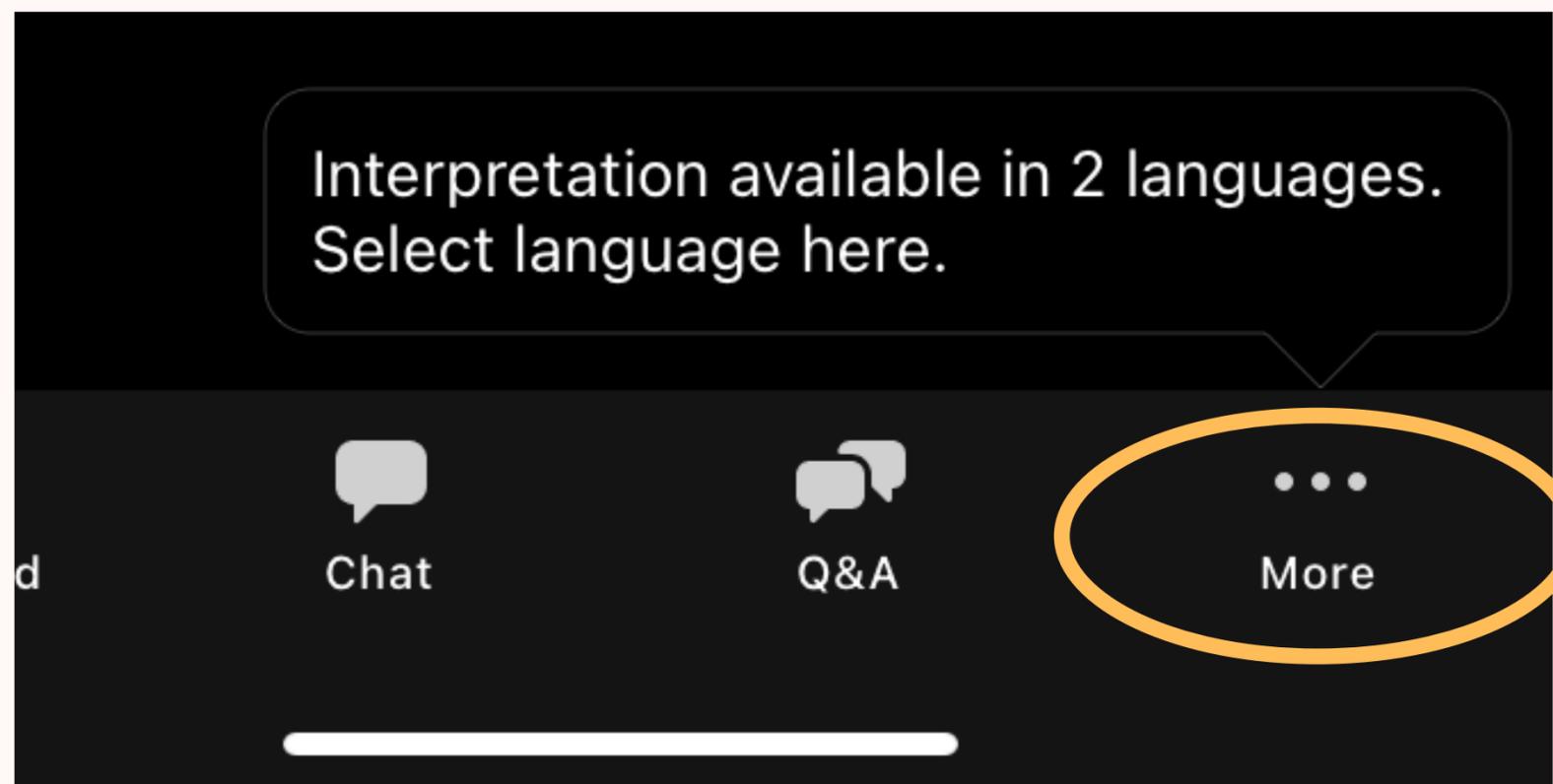
Select the option for the language you speak.

Seleccione la opción para el lenguaje que usted habla.



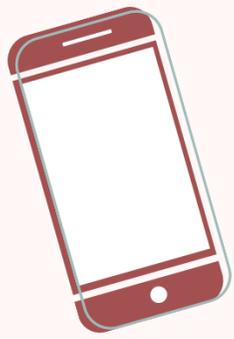
Interpretation on a smartphone Interpretación en un teléfono inteligente

1

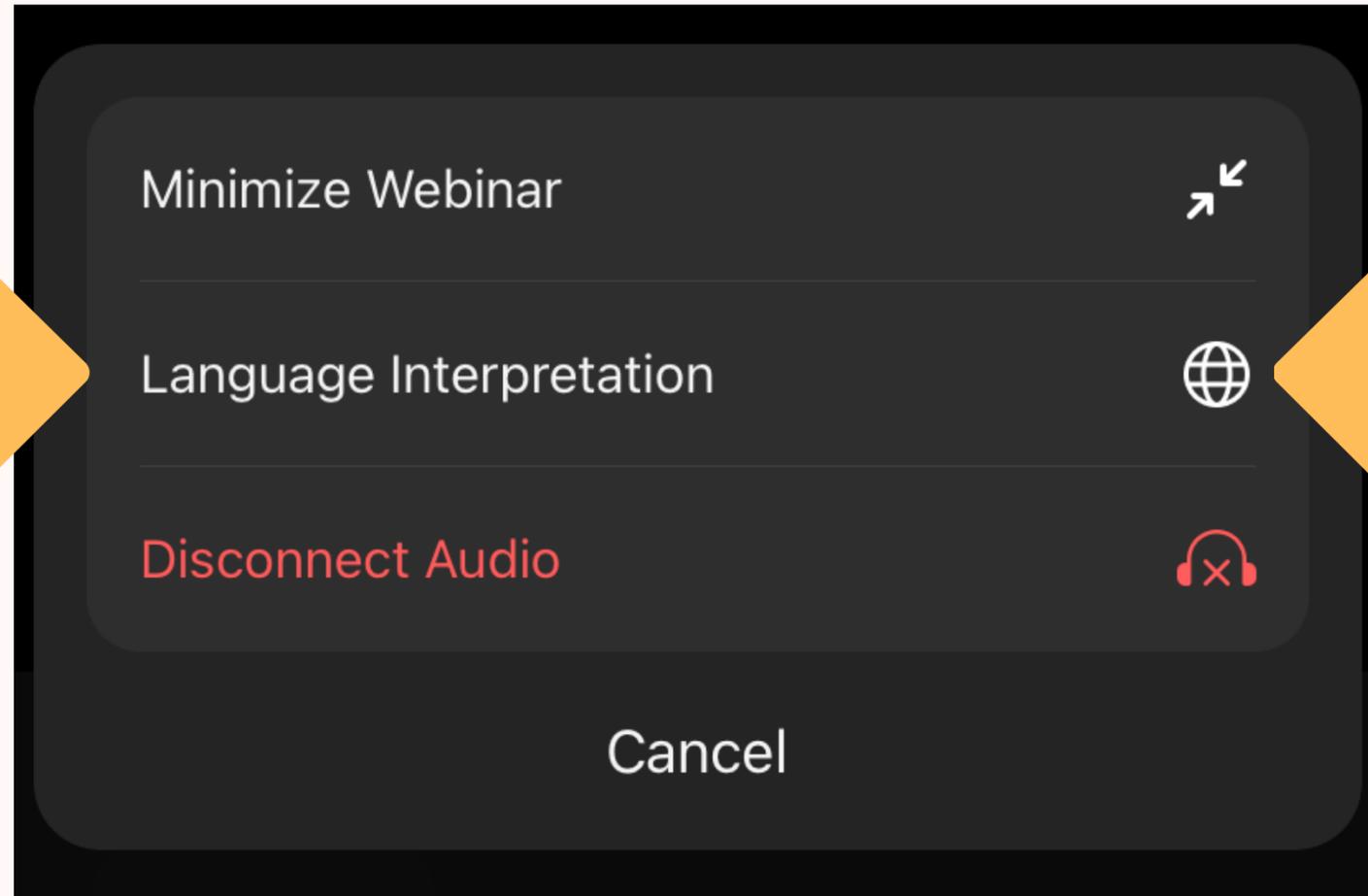


Click on the three dots in the bottom right corner of your screen.

Haga clic en los tres puntos ubicados en la esquina derecha abajo de su pantalla.

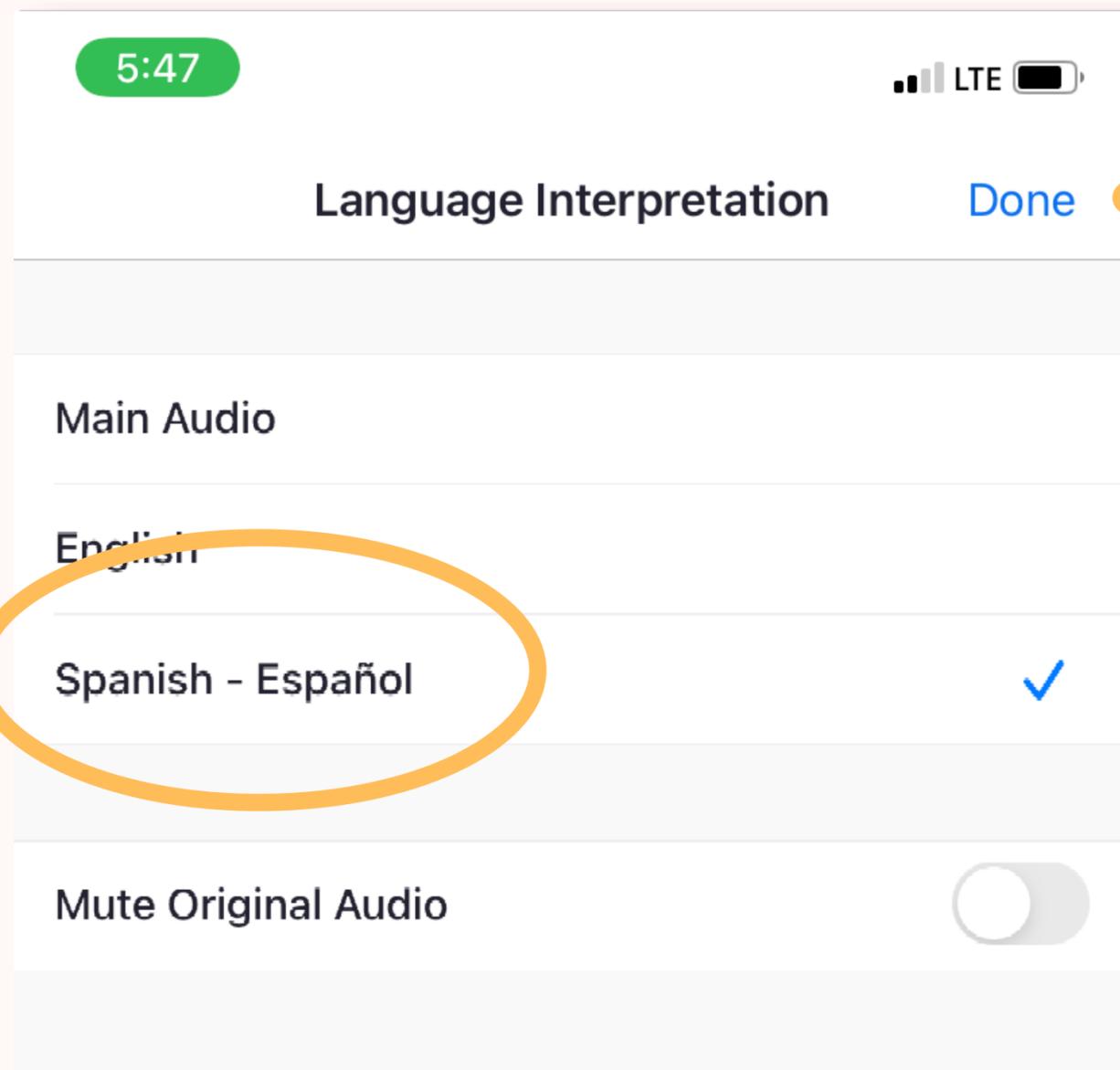
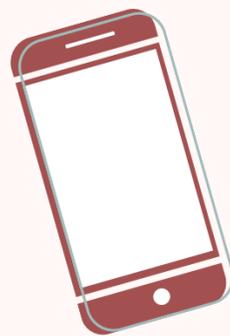


2



Select the option with the globe symbol.

Selecione la opción con el símbolo de globo.



Select your language. Press "Done" in the top right corner.

Seleccione su lenguaje. Presione "Done" arriba en la esquina derecha de su pantalla.

zoom



Interpretation



SOMER VIVA

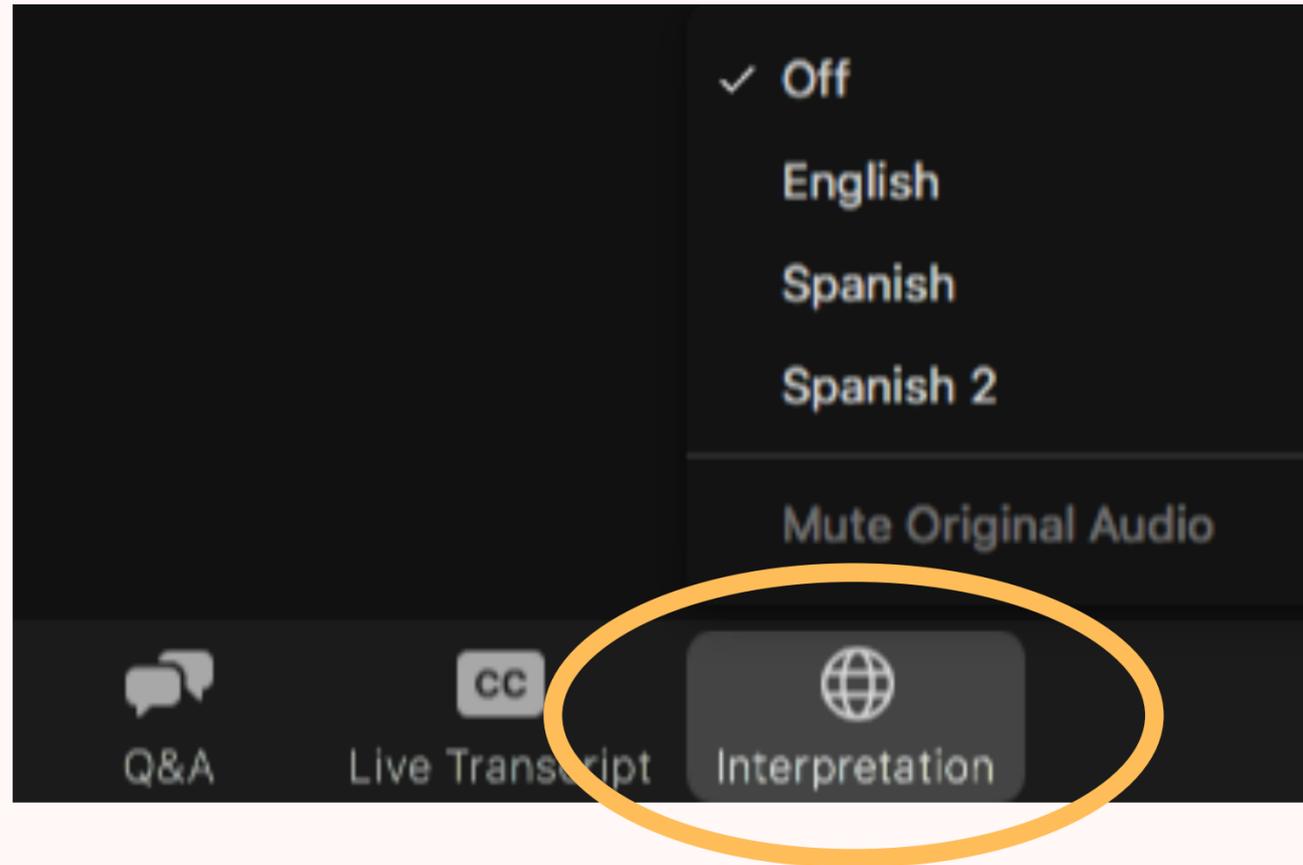
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Interpretation on a computer Interpretação em um computador

1

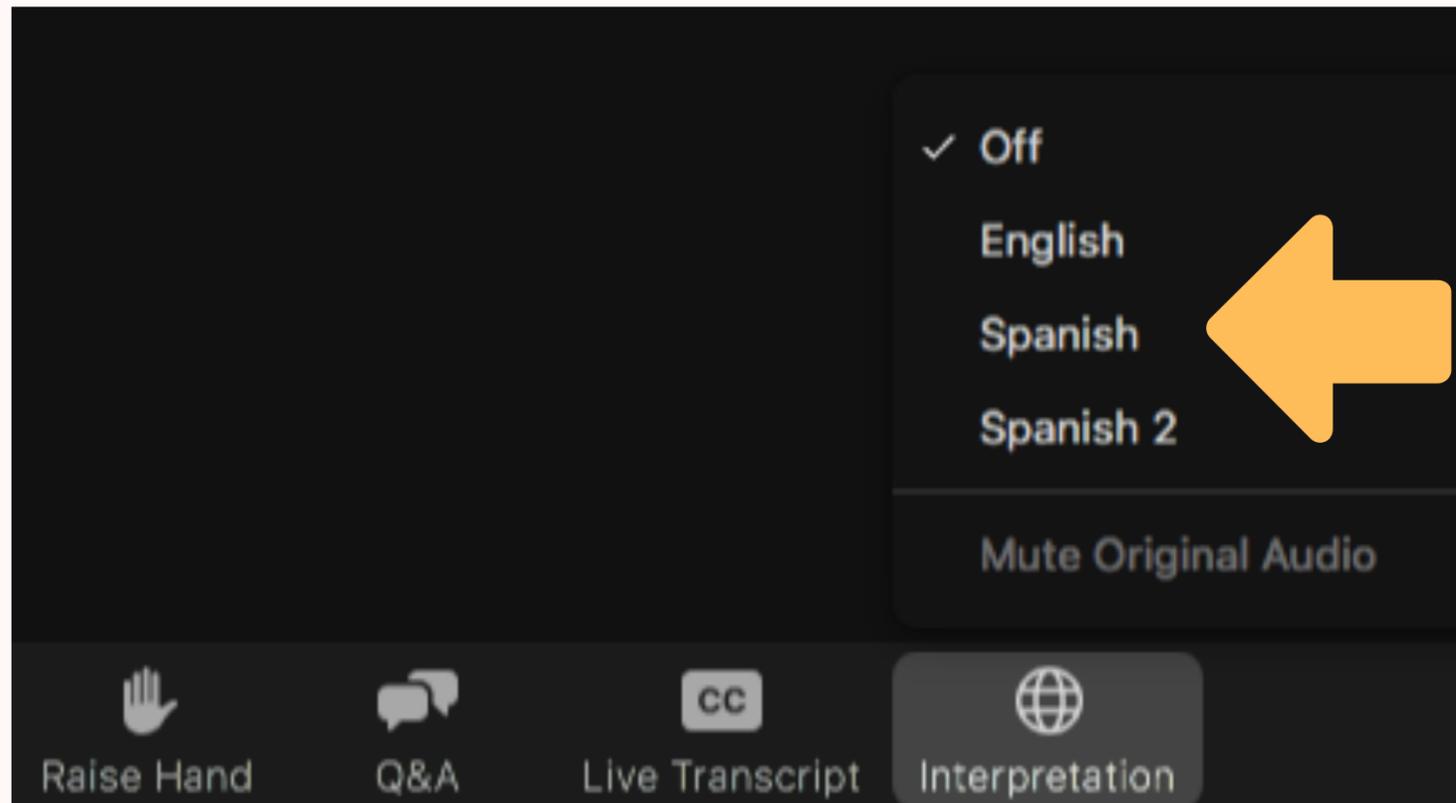


Click on the globe symbol in the bottom right corner of your screen.

Clique no símbolo de um globo no canto inferior direito da sua tela.

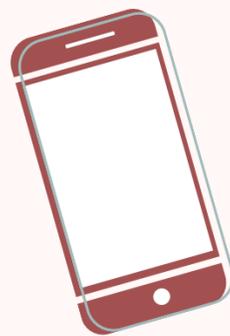


2



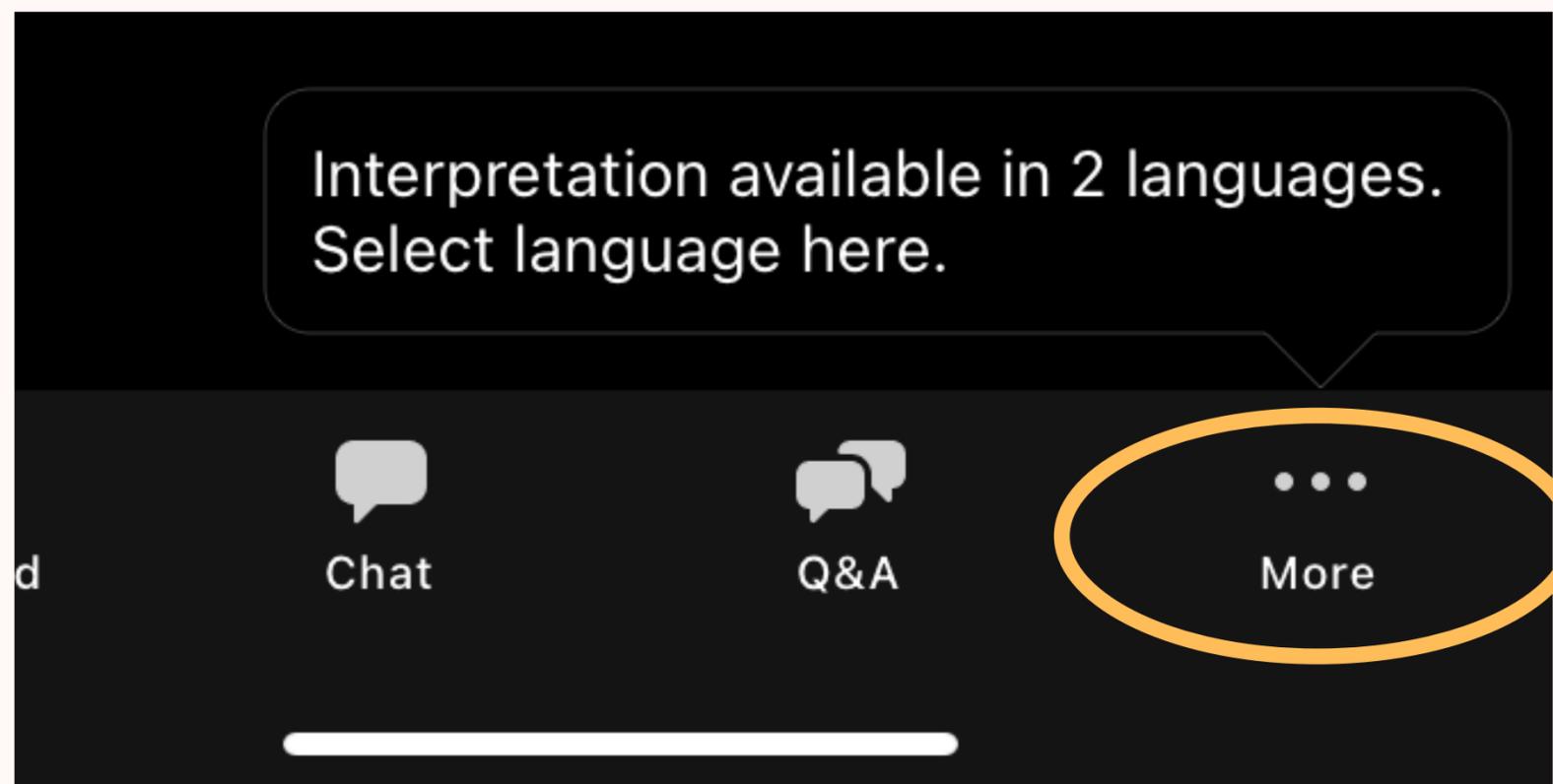
Select the option for the language you speak.

Selecione a opção para o idioma que você fala.



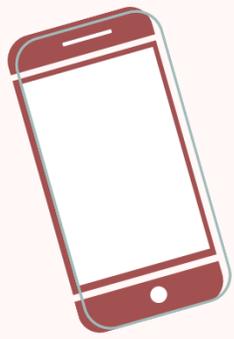
Interpretation on a smartphone
Interpretação em um celular smartphone

1

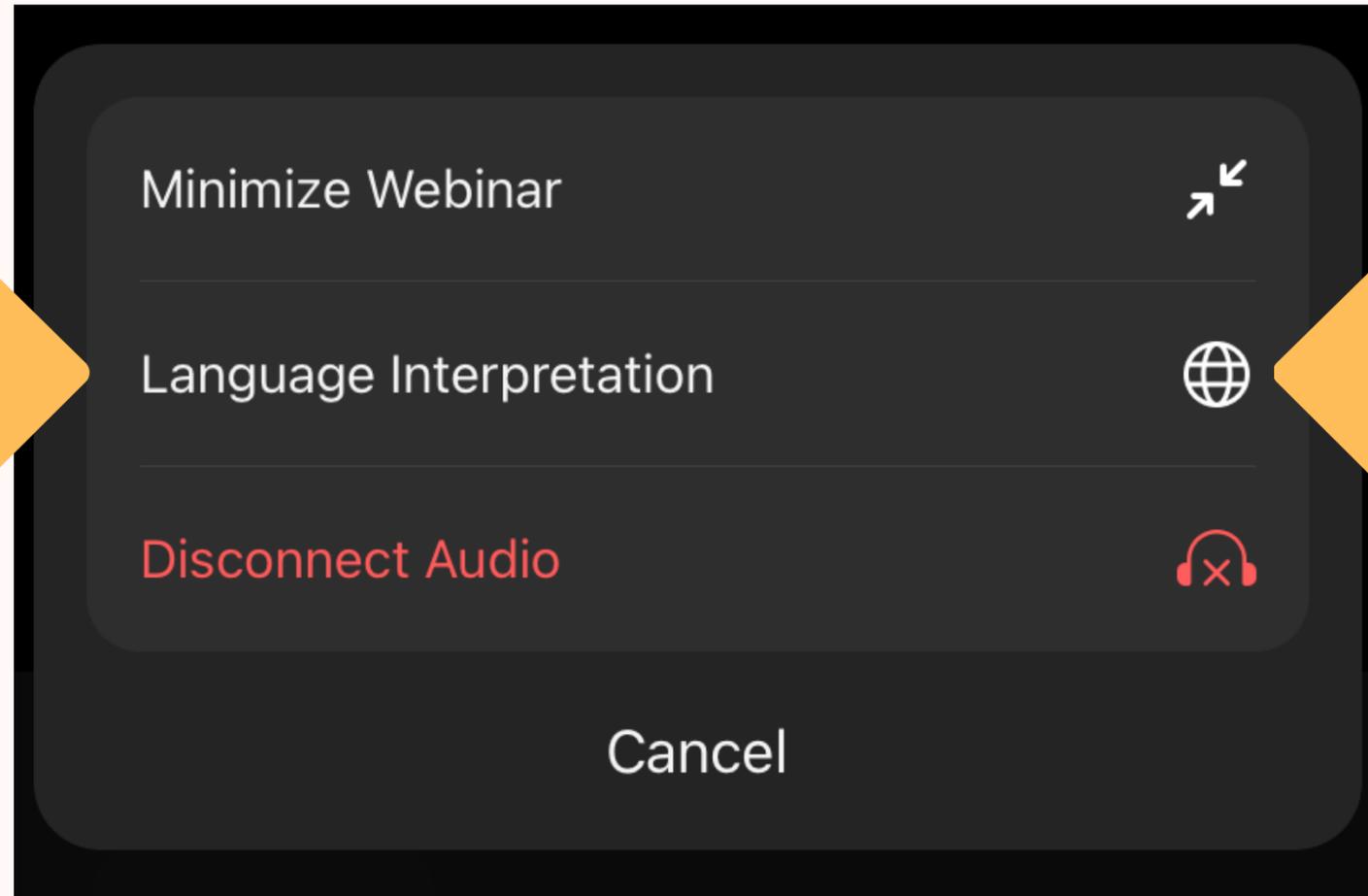


Click on the three dots in the bottom right corner of your screen.

Clique nos três pontinhos no canto inferior direito da sua tela.

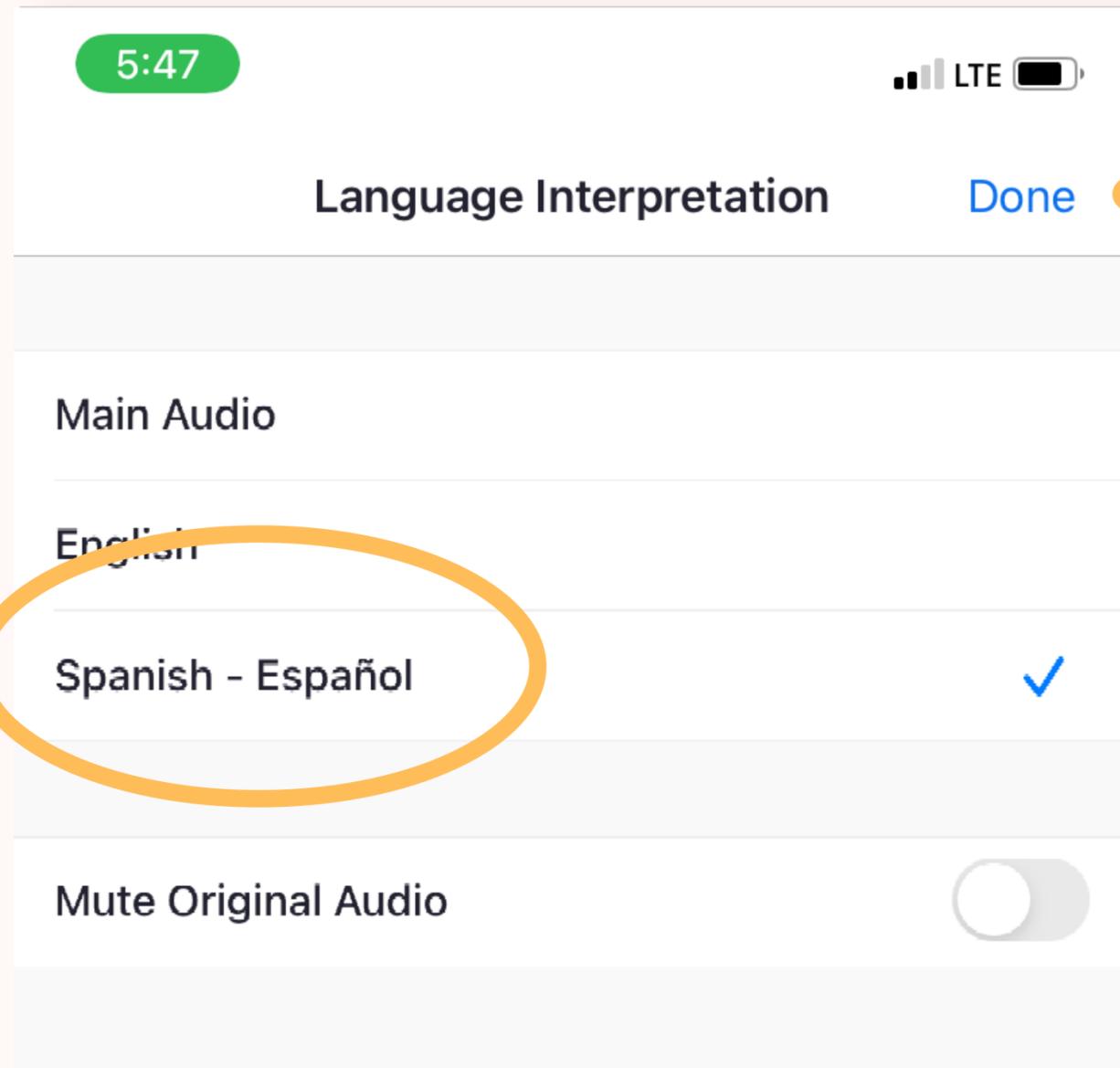


2



Select the option with the globe symbol.

Selecione a opção com o símbolo de um globo.



Select your language. Press "Done" in the top right corner.

Selecione o seu idioma. Aperte "Done" no canto superior direito.

zoom



Interpretation



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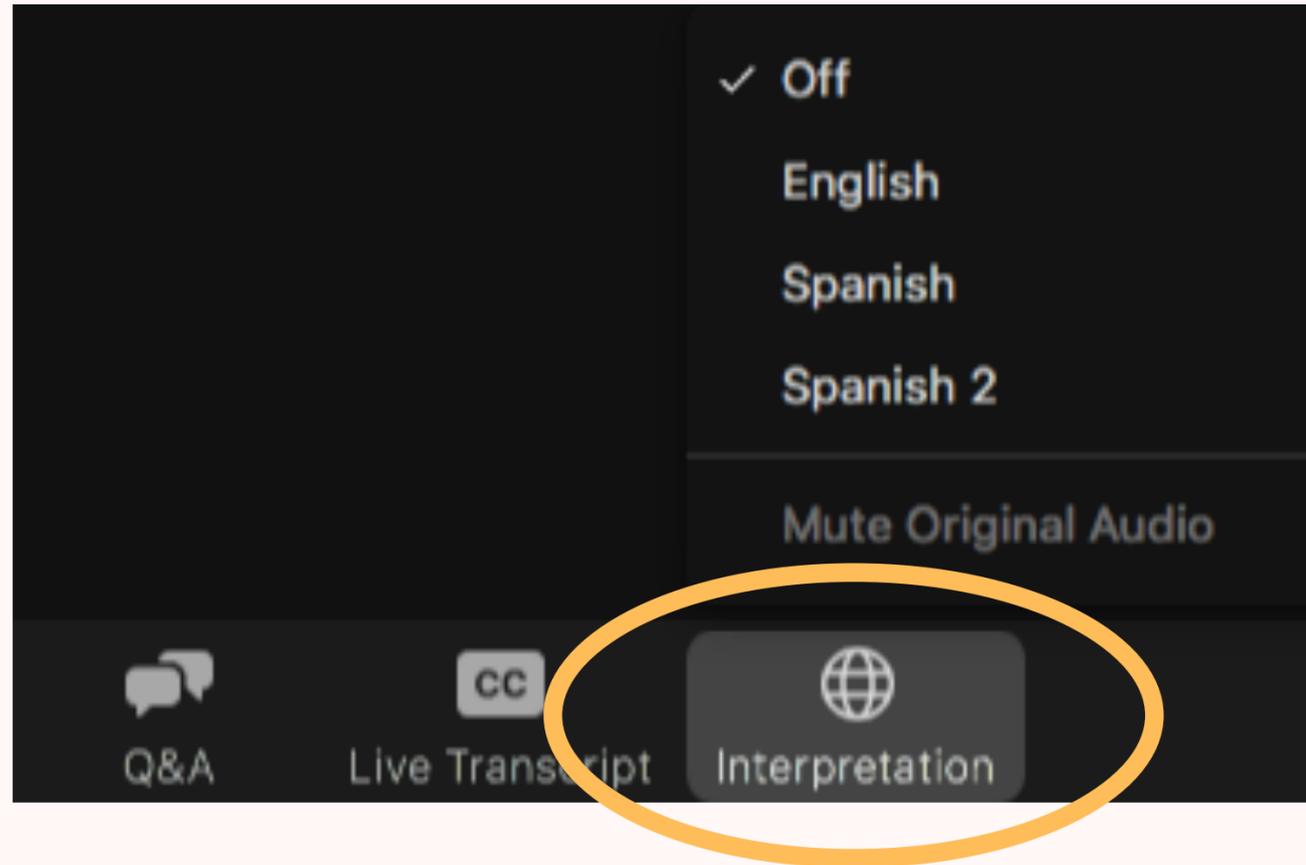
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Interpretation on a computer

在计算机上翻译
在電腦裡翻譯

1



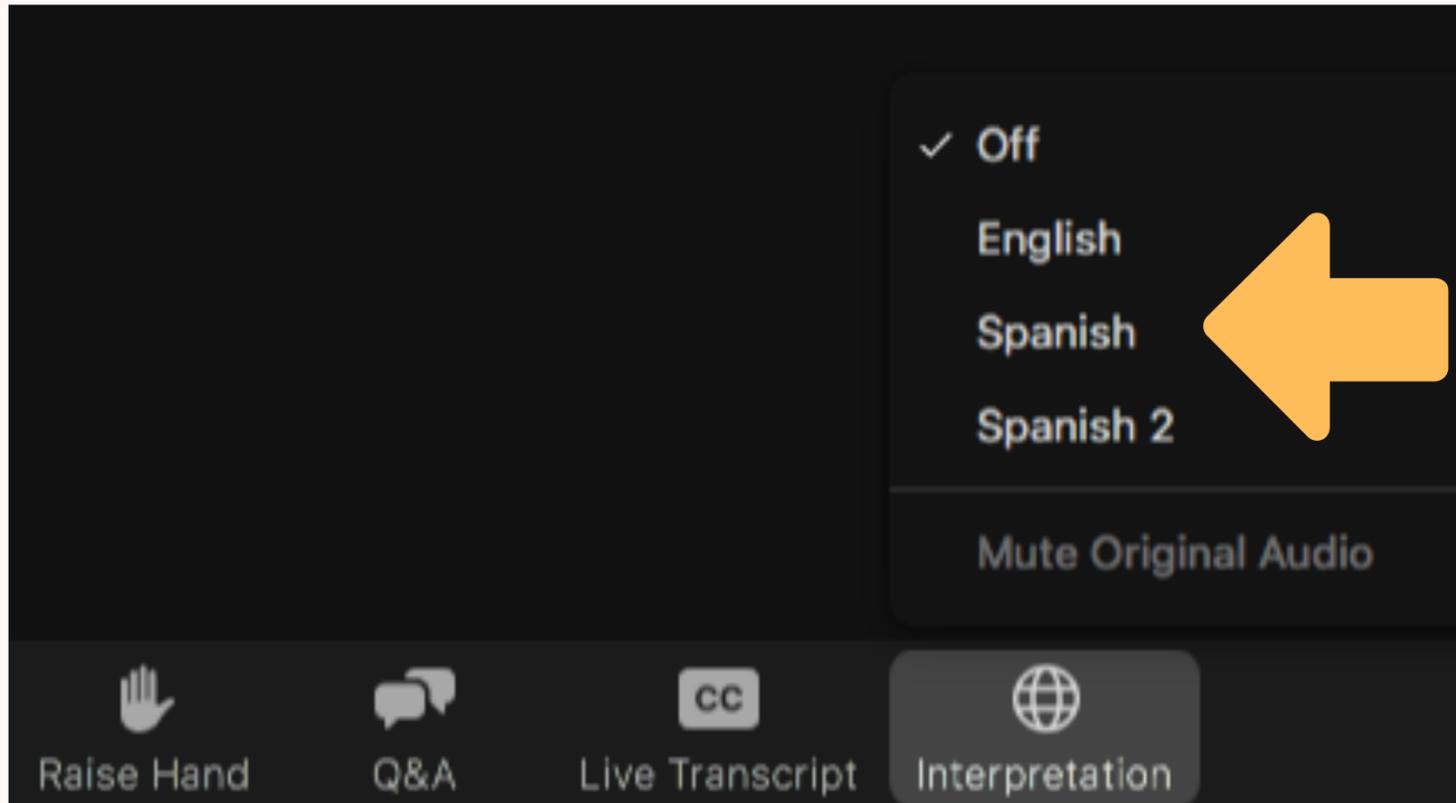
Click on the globe symbol in the bottom right corner of your screen.

点击窗口右下角的环球标志。

點擊視窗右下角的環球標誌。



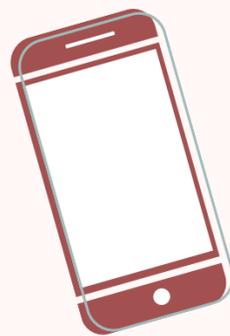
2



Select the option for the language you speak.

选择您需要的语言。

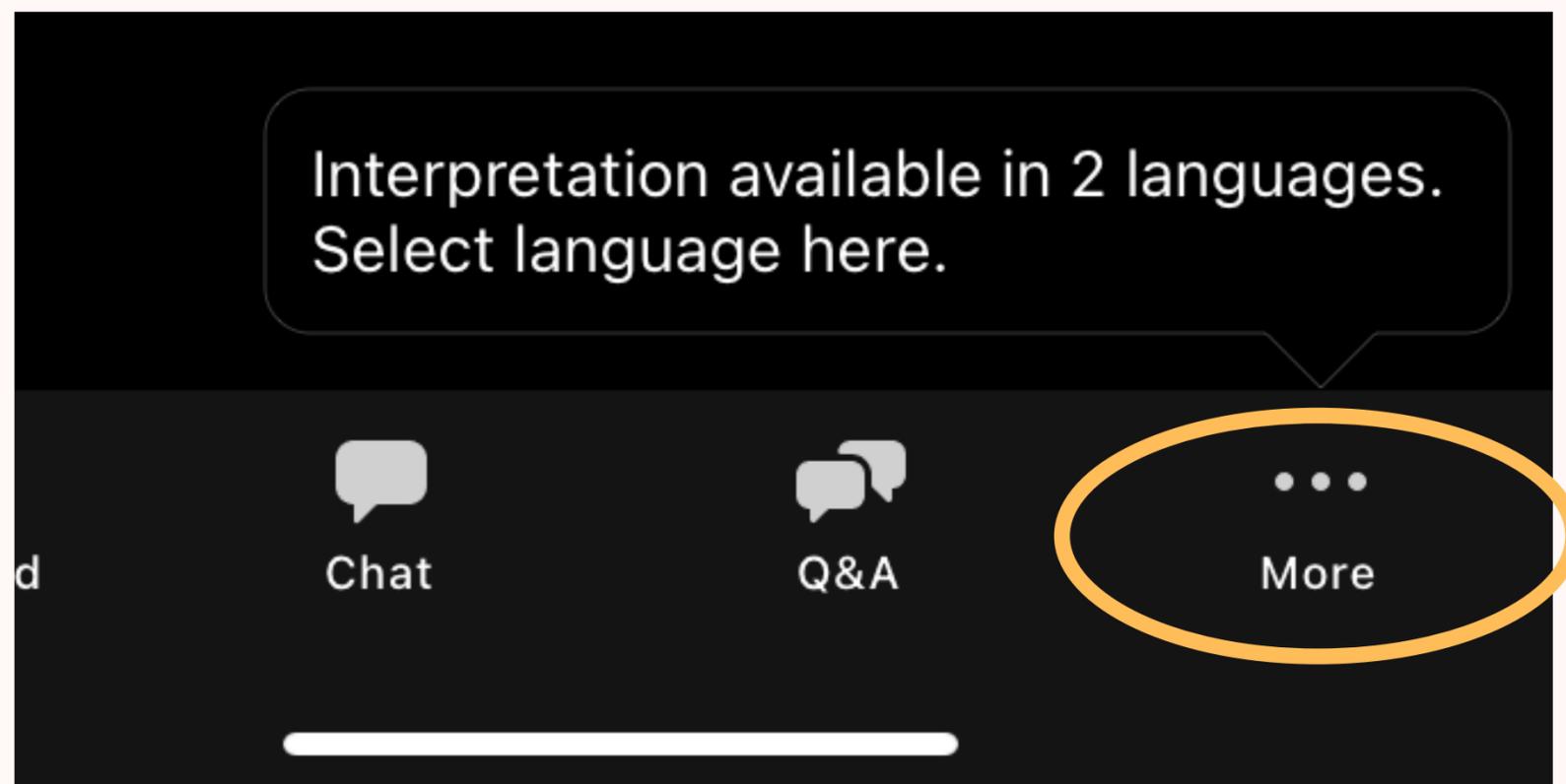
選擇您需要的語言。



Interpretation on a smartphone

在智能手机上翻译
在智慧型手機裡翻譯

1



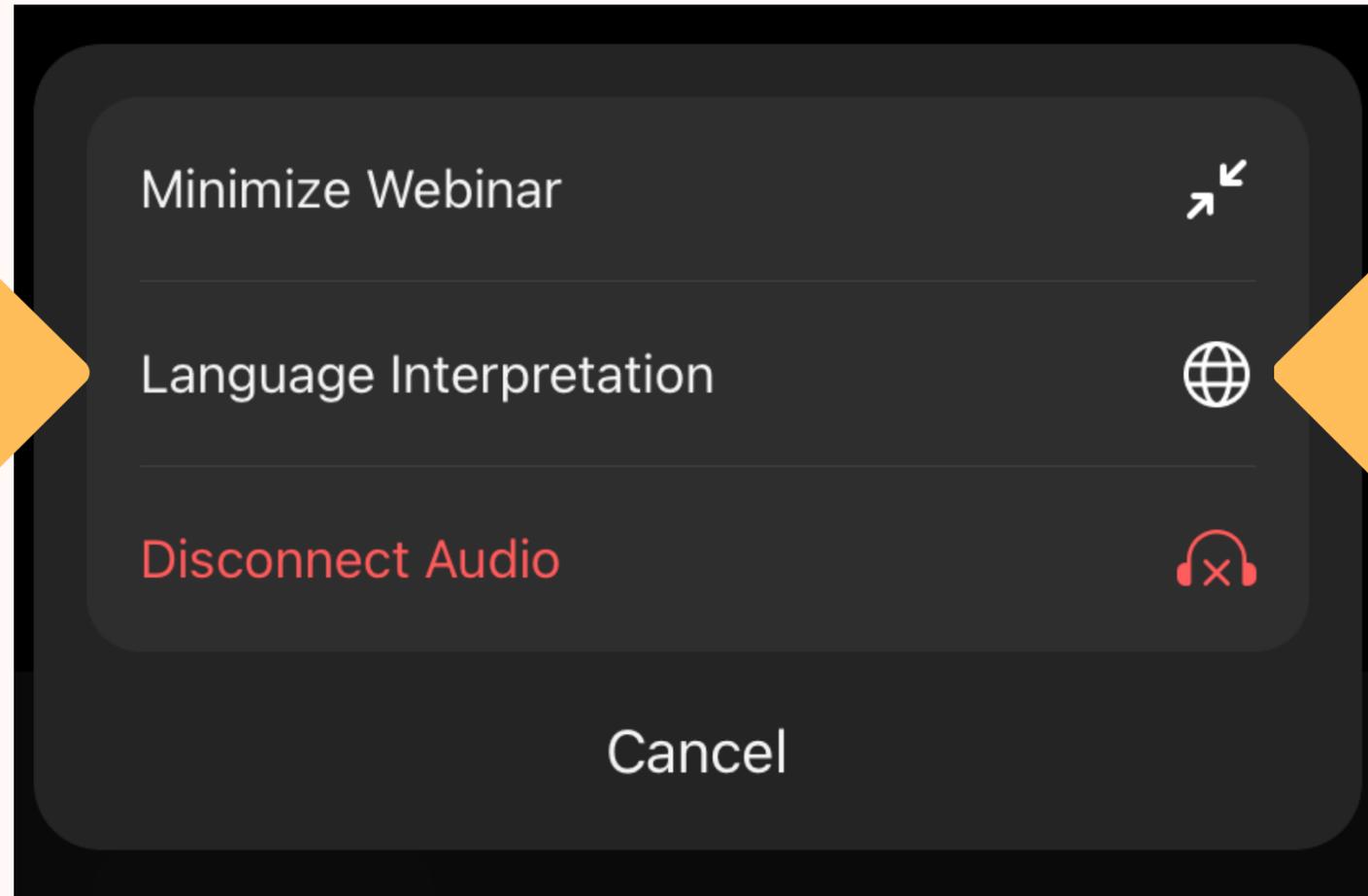
Click on the three dots in the bottom right corner of your screen.

点击右下角的三点。

點擊右下角的三點



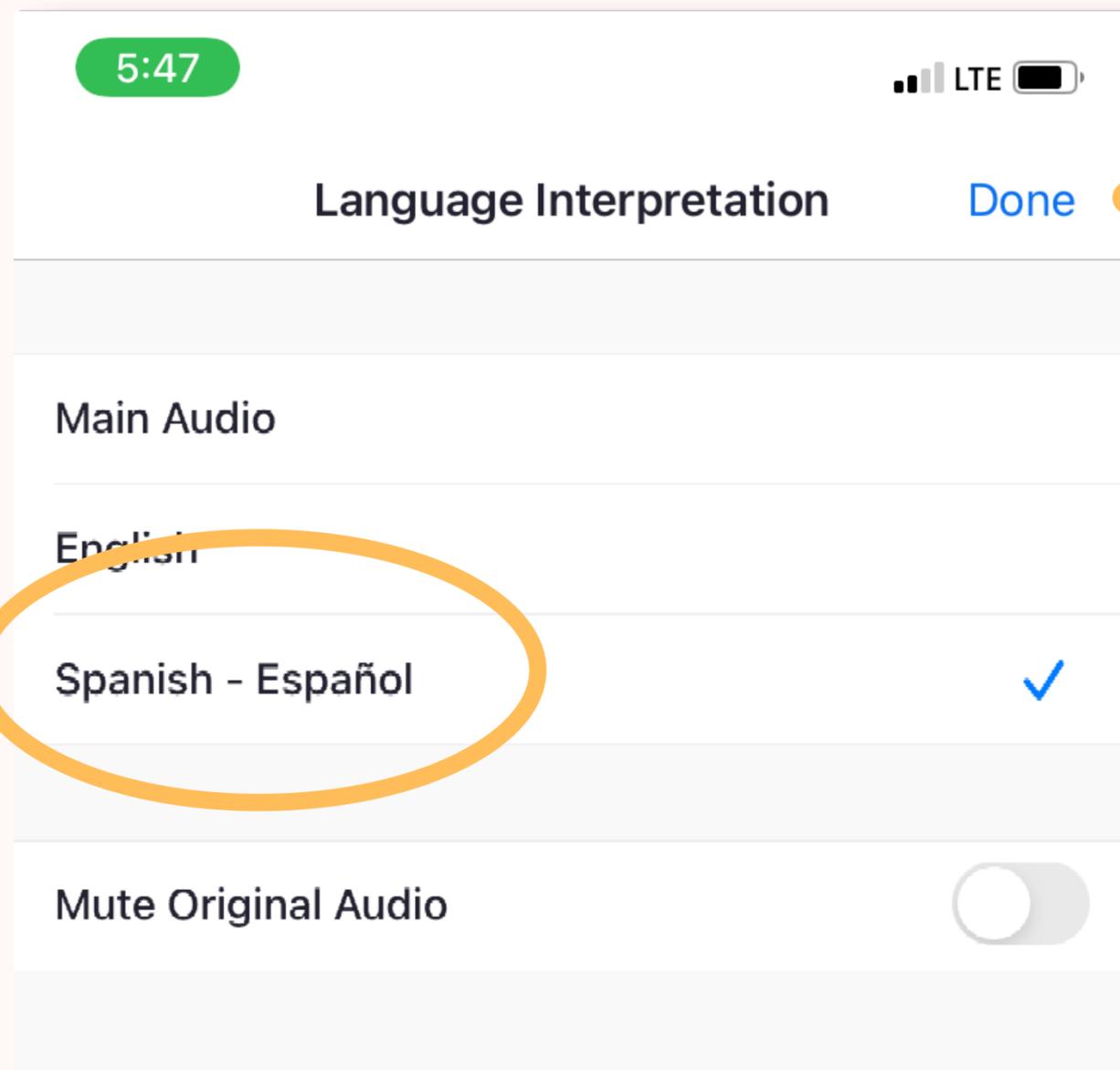
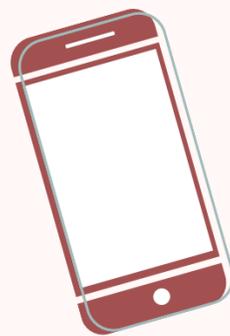
2



Select the option with the globe symbol.

點擊環球標志的選項。

點擊環球標志的選項。



Select your language. Press "Done" in the top right corner.

选择您需要的语言。点击右上角的「Done」。

選擇您需要的語言。點擊右上角的「Done」。

zoom



Interpretation



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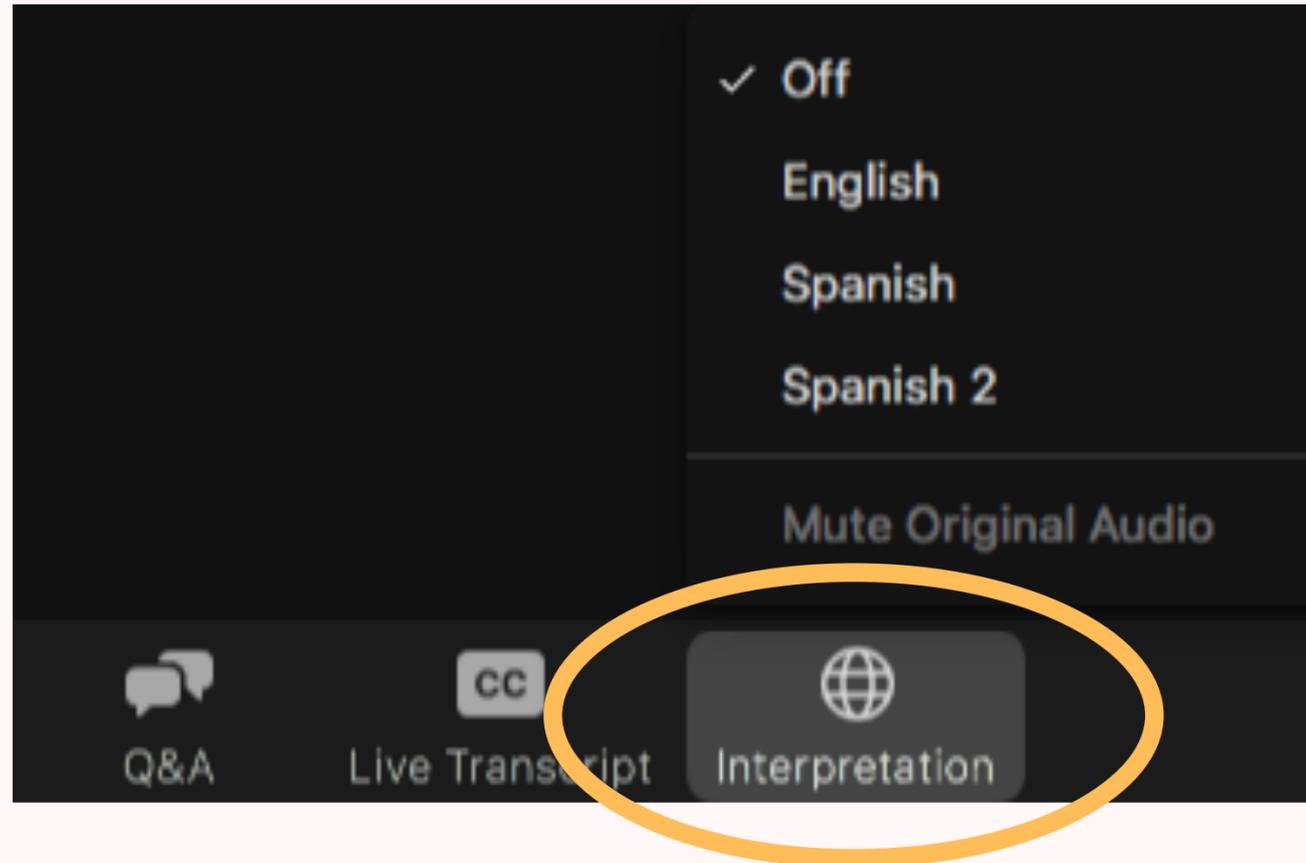
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Interpretation on a computer Entèpretasyon nan yon konpitè

1

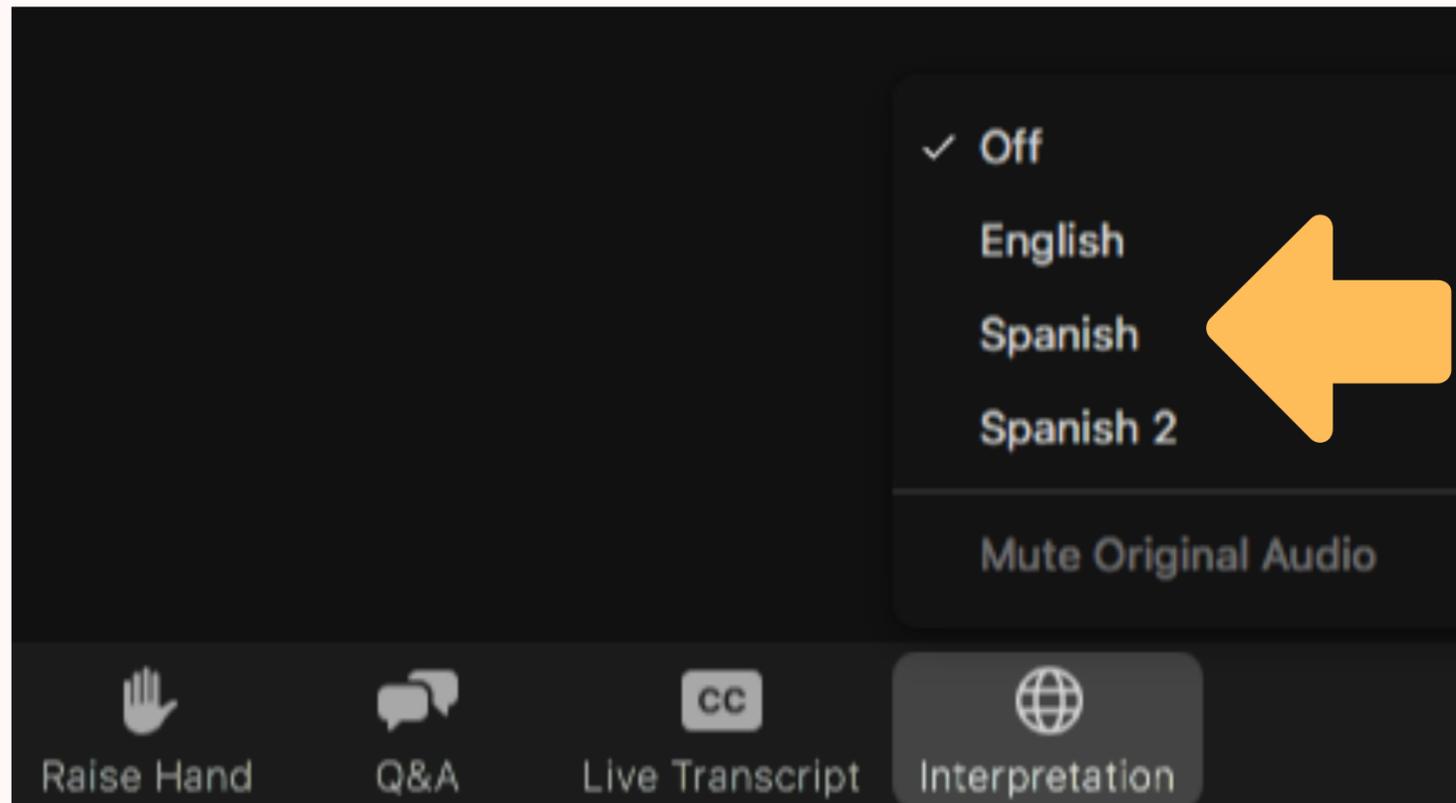


Click on the globe symbol in the bottom right corner of your screen.

Klike sou senbòl glob la anba adwat nan kwen nan ekran an.

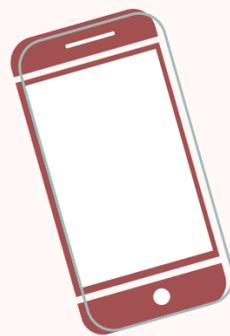


2



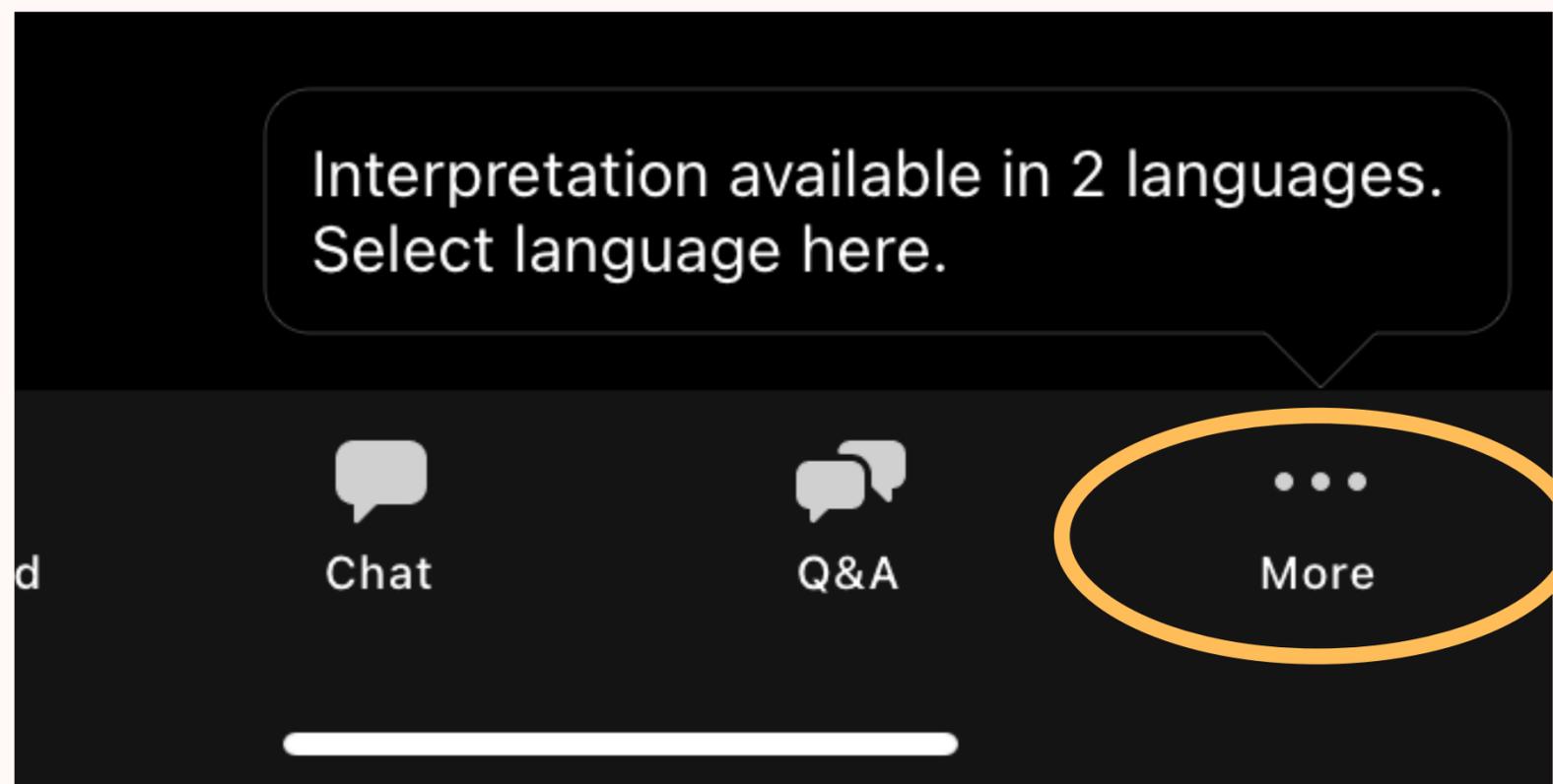
Select the option for the language you speak.

Seleksyone opsyon pou lang ou pale a.



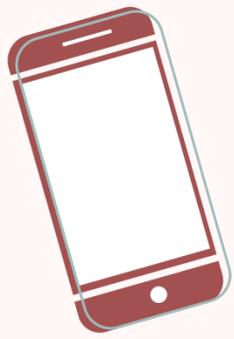
Interpretation on a smartphone
Entèpretasyon nan yon telefòn entelijan (smartphone)

1



Click on the three dots in the bottom right corner of your screen.

Klike nan 3 pwen anba adwat nan kwen ekran ou an.



2

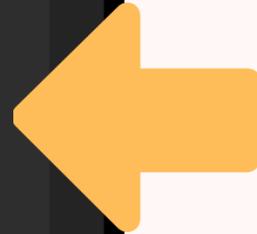


Minimize Webinar 

Language Interpretation 

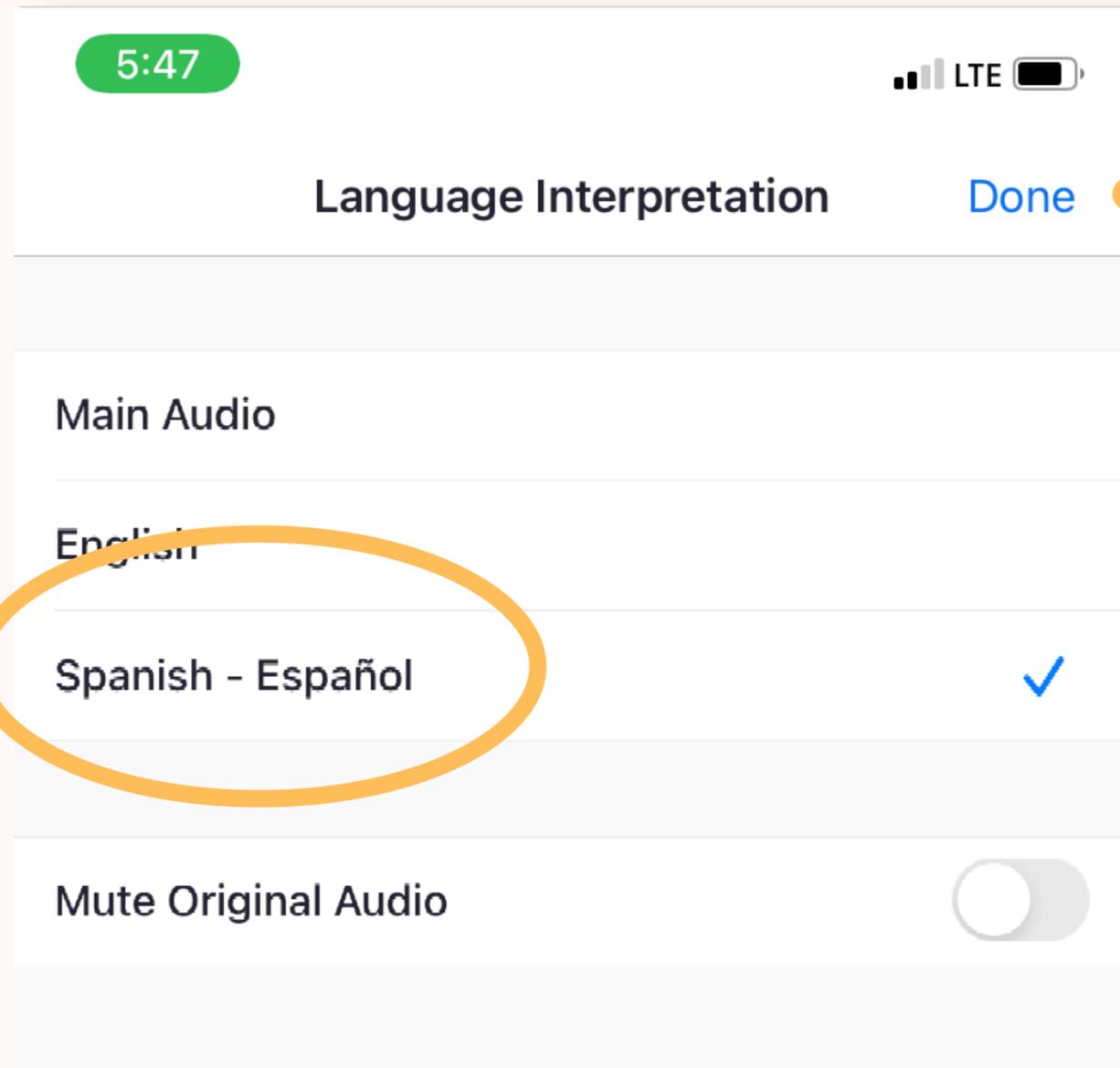
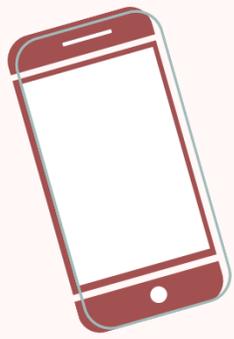
Disconnect Audio 

Cancel



Select the option with the globe symbol.

Seleksyone opsyon ki gen senbòl glob la.



Select your language. Press "Done" in the top right corner.

Seleksyone lang ou. Pese "Done" anlè adwat nan kwen an.

zoom



Interpretation



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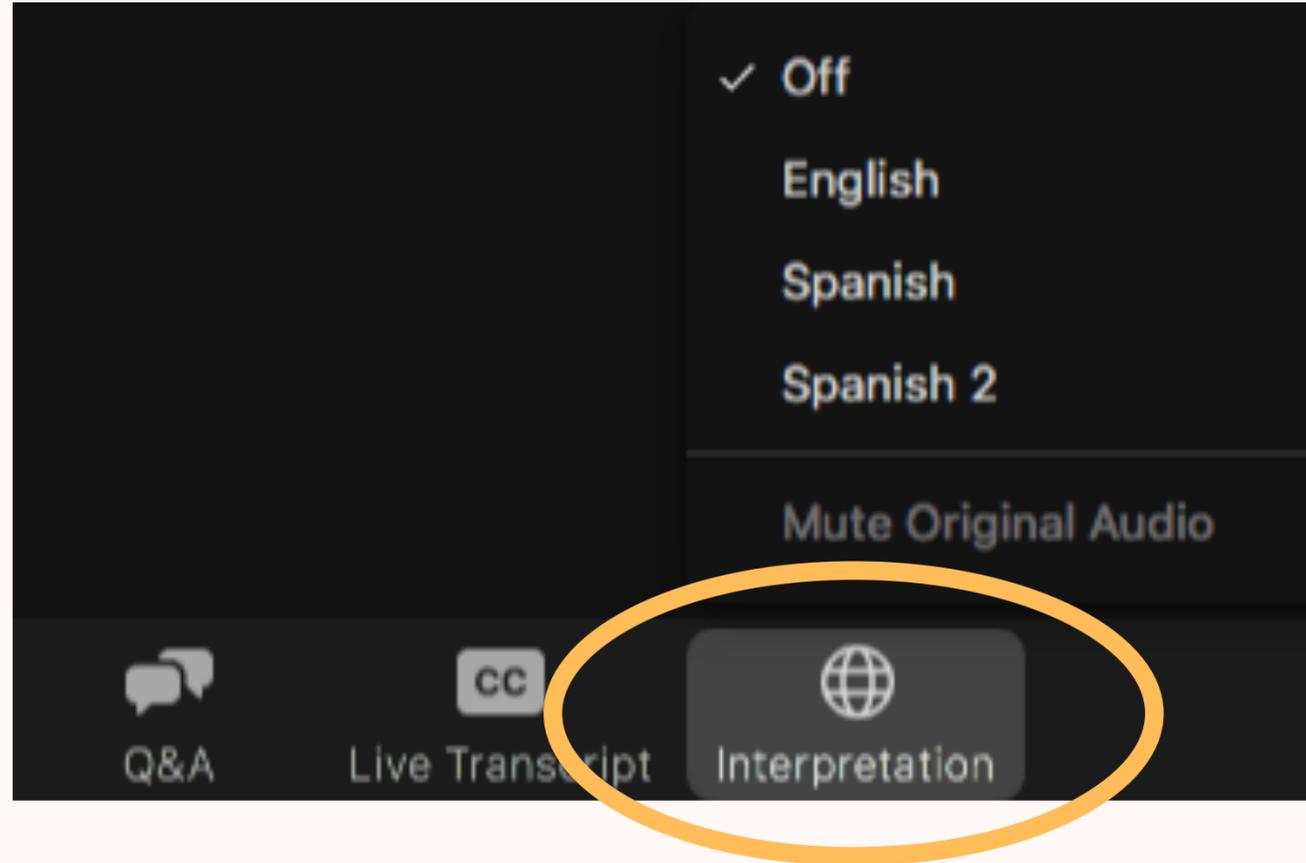
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Interpretation on a computer

कम्प्युटरमा अनुवाद

1

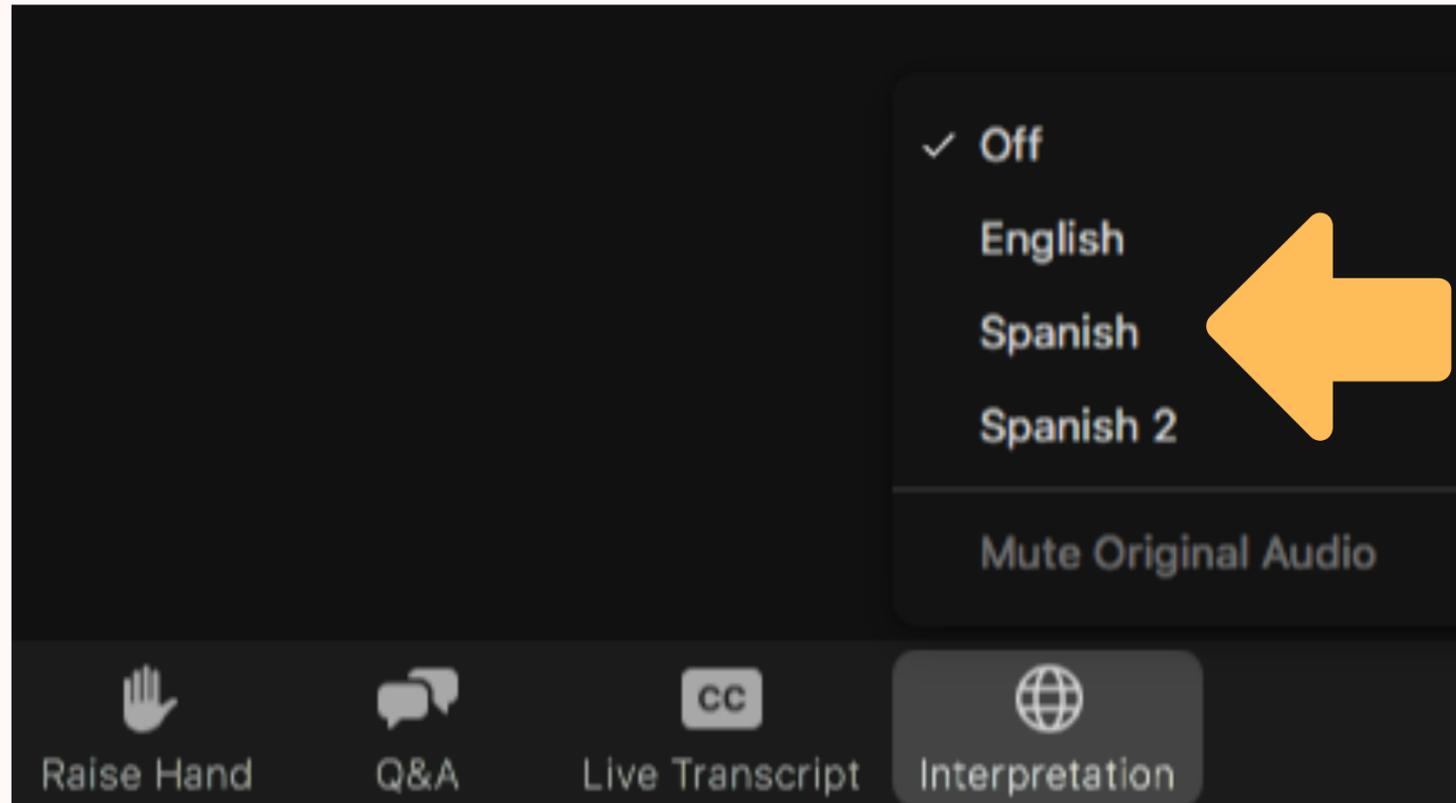


Click on the globe symbol in the bottom right corner of your screen.

तपाईंको स्क्रिनको तल दायाँ कुनामा रहेको ग्लोब प्रतीकमा थिच्नुहोस्।

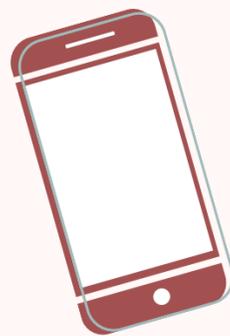


2



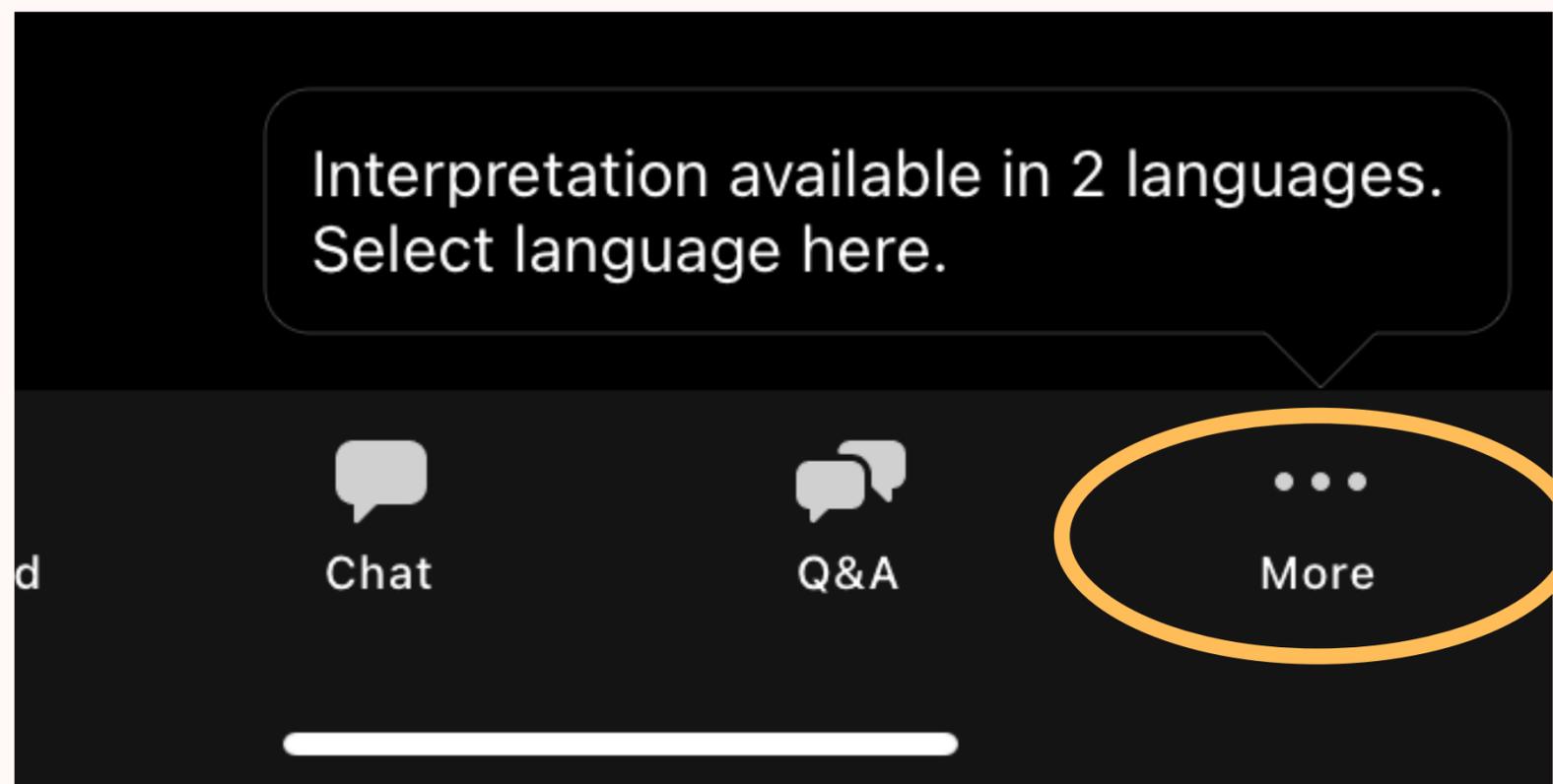
Select the option for the language you speak.

तपाईंले बोल्ने भाषाको लागि विकल्प चयन गर्नुहोस्।



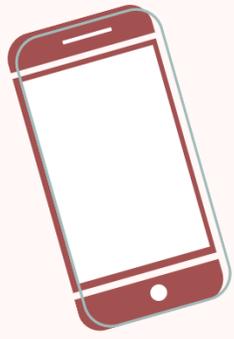
Interpretation on a smartphone स्मार्टफोनमा अनुवाद

1

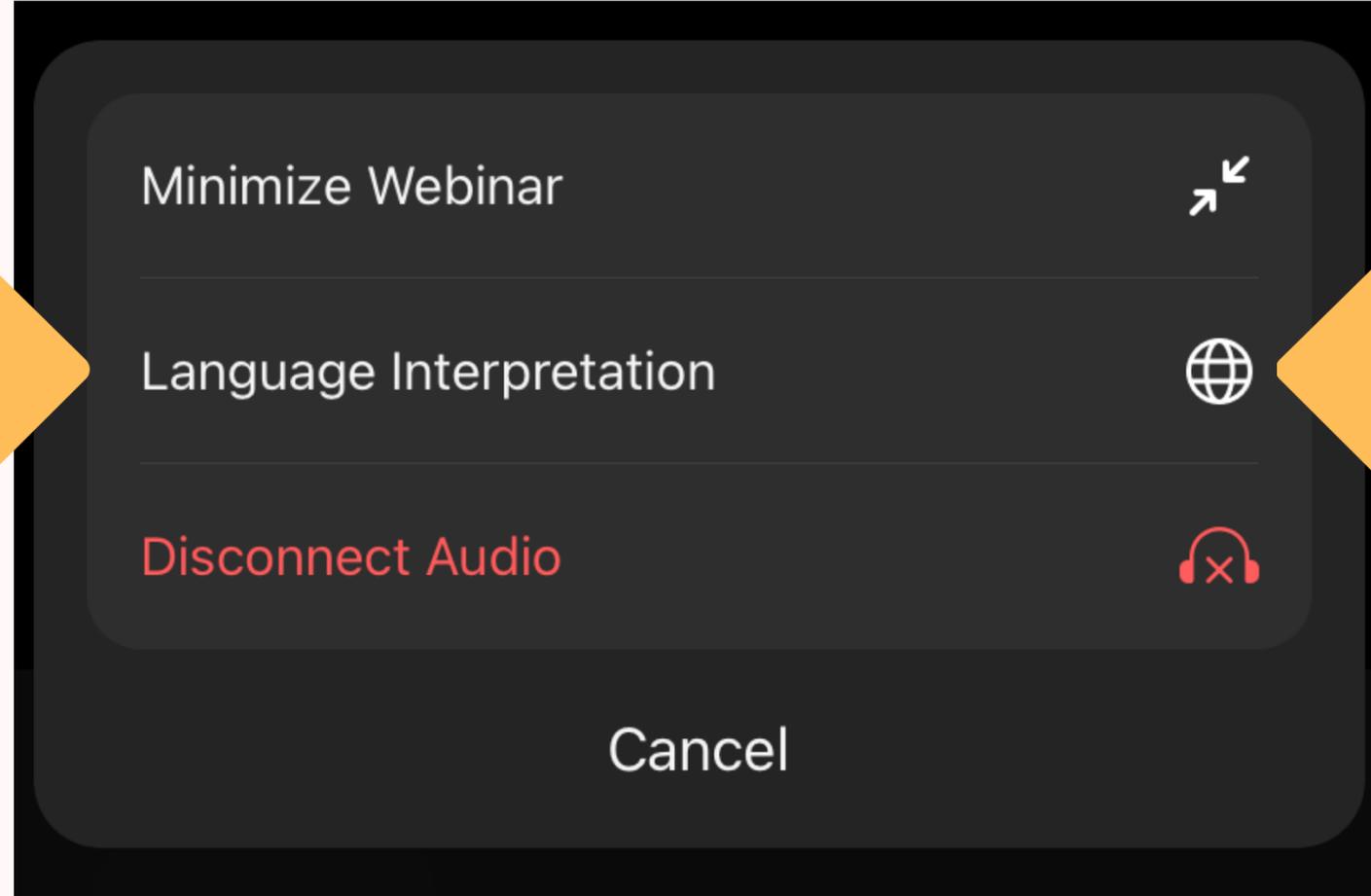


Click on the three dots in the bottom right corner of your screen.

तपाईंको स्क्रिनको तल दायाँ कुनामा
तीनवटा थोप्लाहरूमा थिच्नुहोस्।

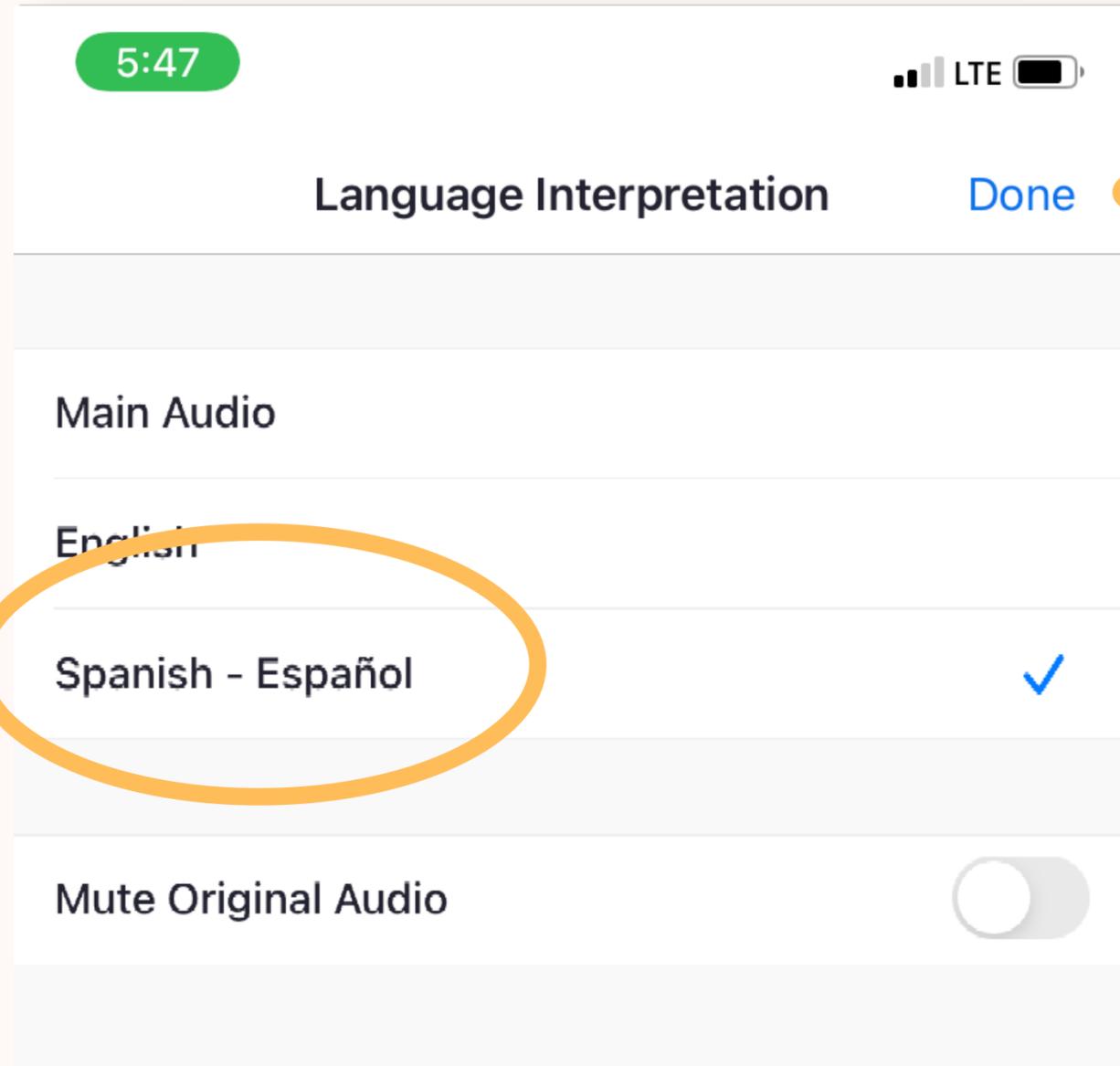
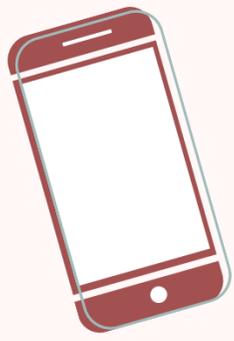


2



Select the option with the globe symbol.

ग्लोब प्रतीकमा विकल्प चयन गर्नुहोस्।



Select your language. Press "Done" in the top right corner.

आफ्नो भाषा चयन गर्नुहोस्। शीर्ष दायाँ कुनामा "Done" थिच्नुहोस्।

zoom



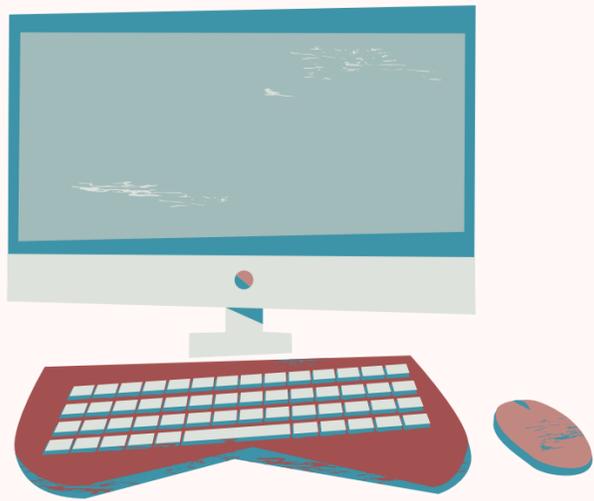
Interpretation



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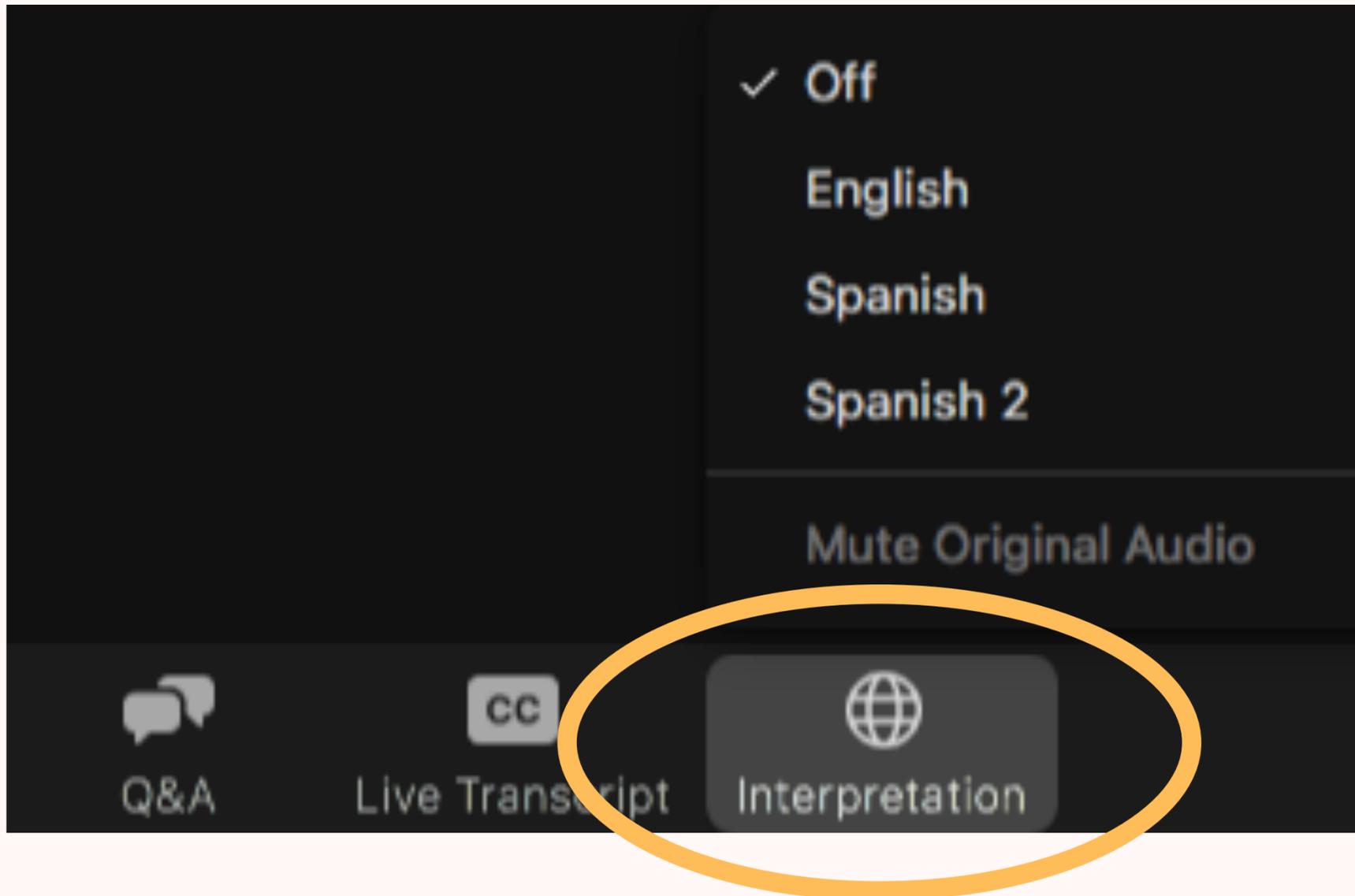
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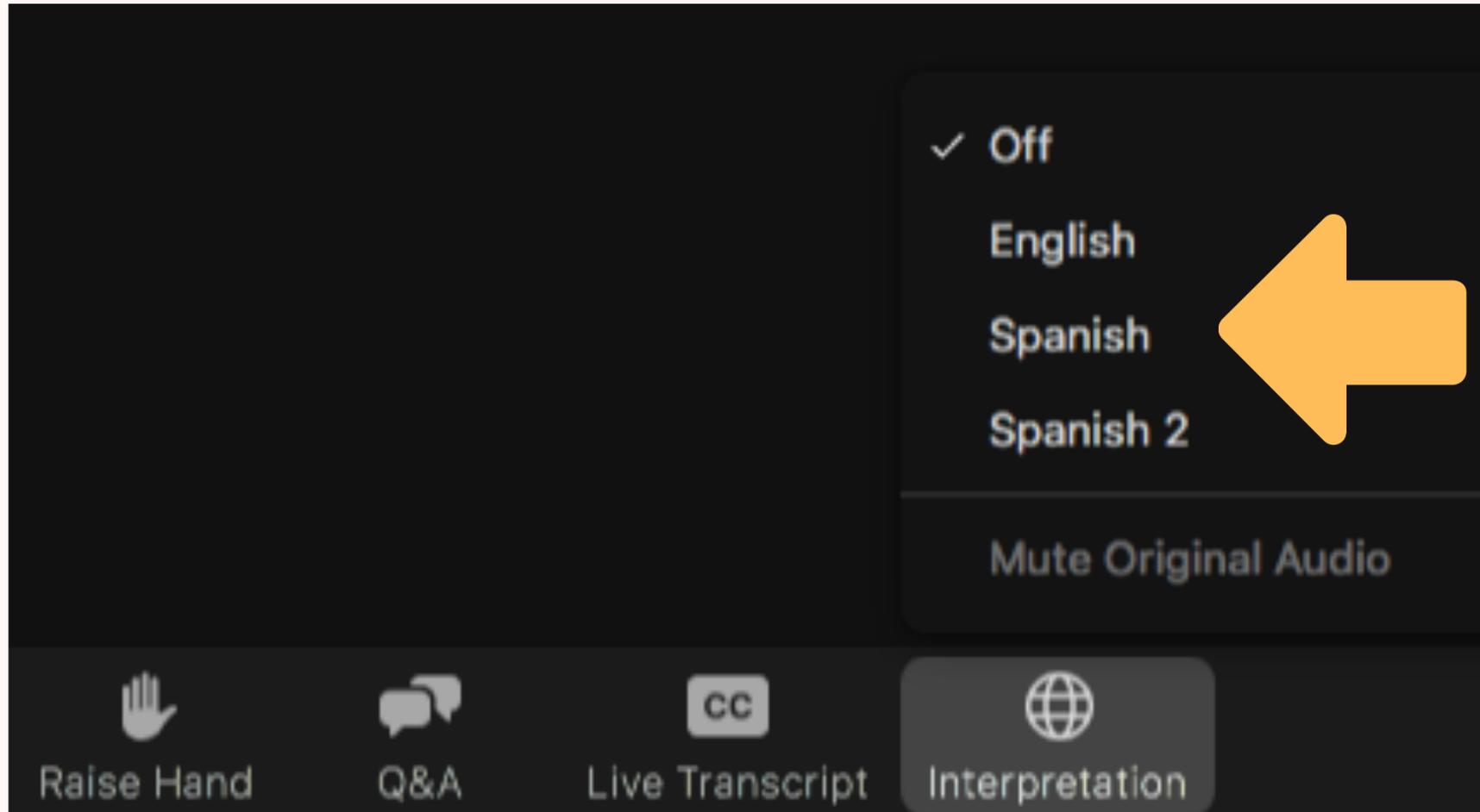
Interpretation on a computer

በኮምፒዩተር ላይ ትርጓሜ



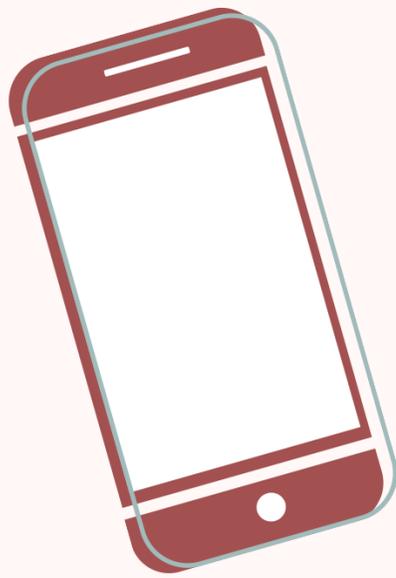
Click on the globe symbol in the bottom right corner of your screen.

በማያ ገጹ ታችኛው ቀኝ ጥግ ላይ ያለውን የግሎብ ምልክት ይጫኑ።



Select the option for the language you speak.

ለሚናገሩት ቋንቋ አማራጩን ይምረጡ።



Interpretation on a smartphone በስማርትፎን ላይ ትርጓሜ

Interpretation available in 2 languages.
Select language here.



Chat



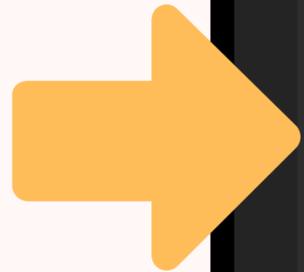
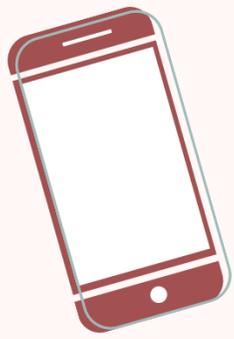
Q&A



More

Click on the three dots in the bottom right corner of your screen.

ከግሎብ ምልክት ጋር ያለውን አማራጭ ይምረጡ።



Minimize Webinar 

Language Interpretation 

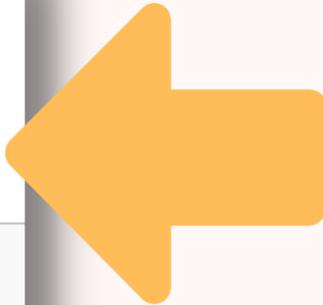
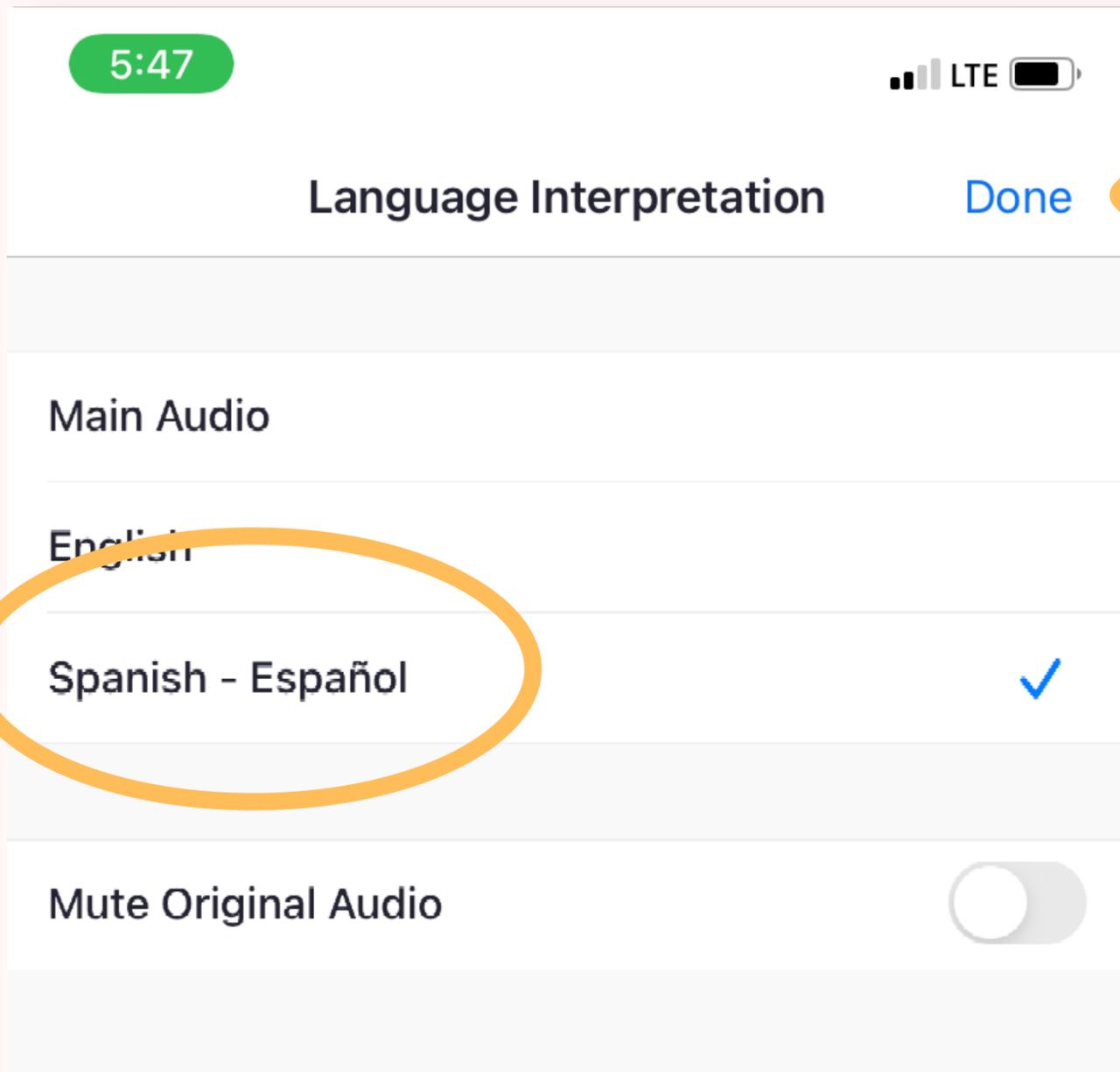
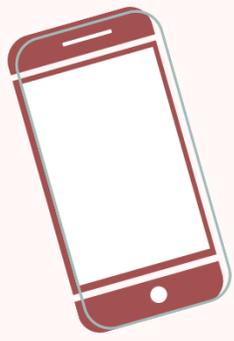
Disconnect Audio 

Cancel



Select the option with the globe symbol.

ከግሎብ ምልክት ጋር ያለውን አማራጭ ይምረጡ።



Select your language. Press "Done" in the top right corner.

ቋንቋዎን ይምረጡ። በላይኛው ቀኝ ጥግ ላይ "Done" የሚለውን ይጫኑ።

zoom



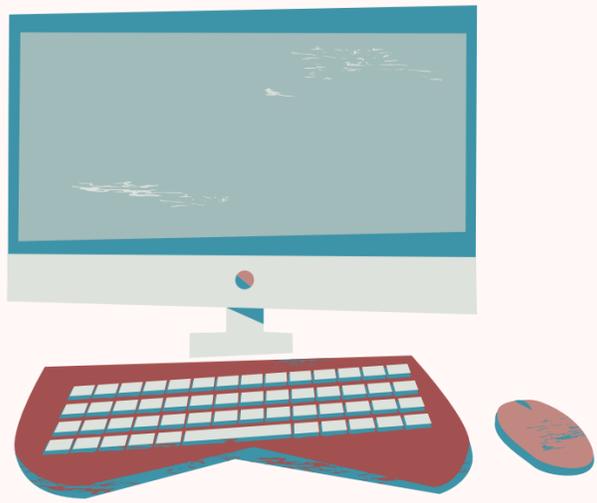
Interpretation



SOMER VIVA

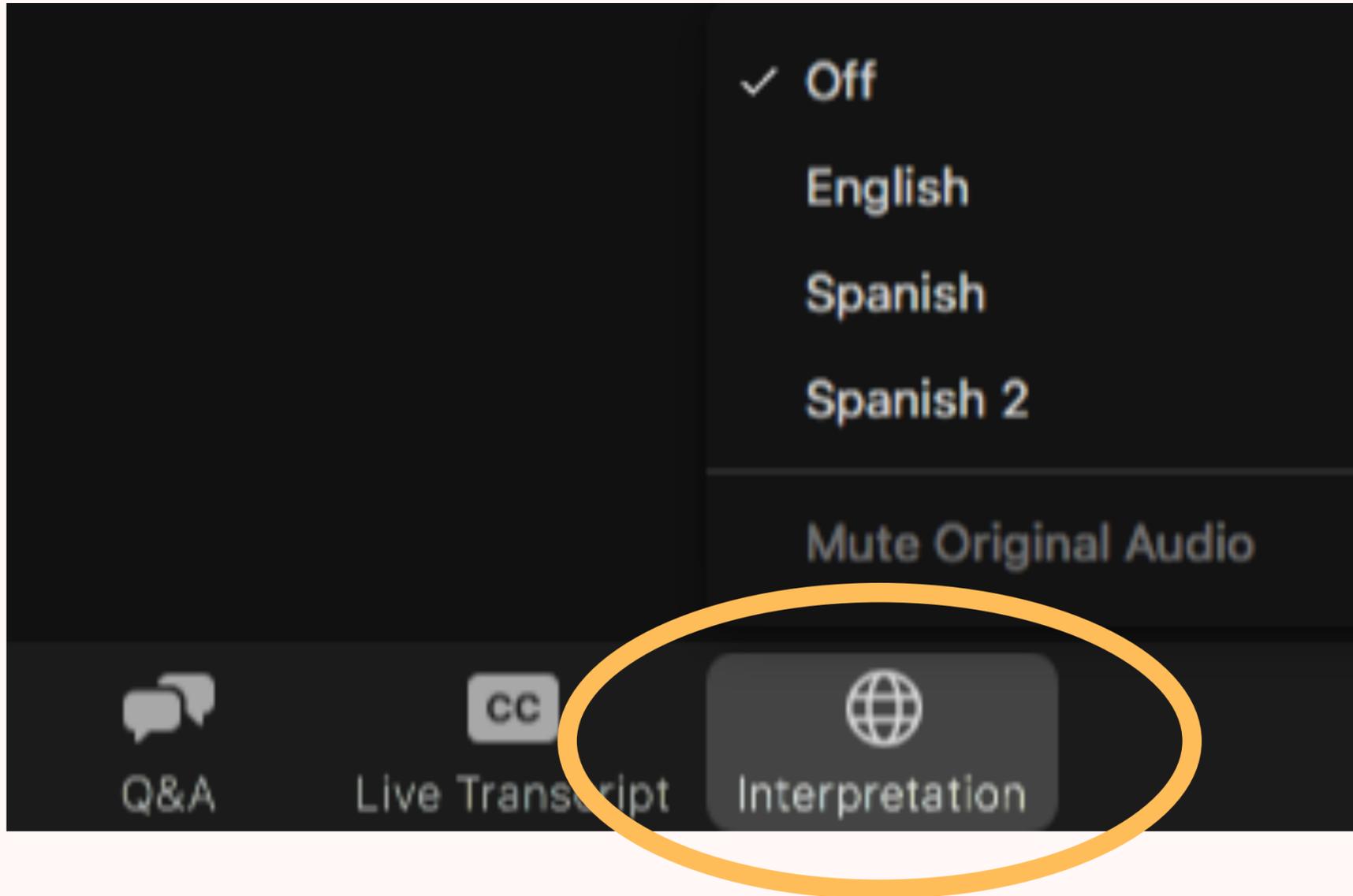
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我们会说您的语言



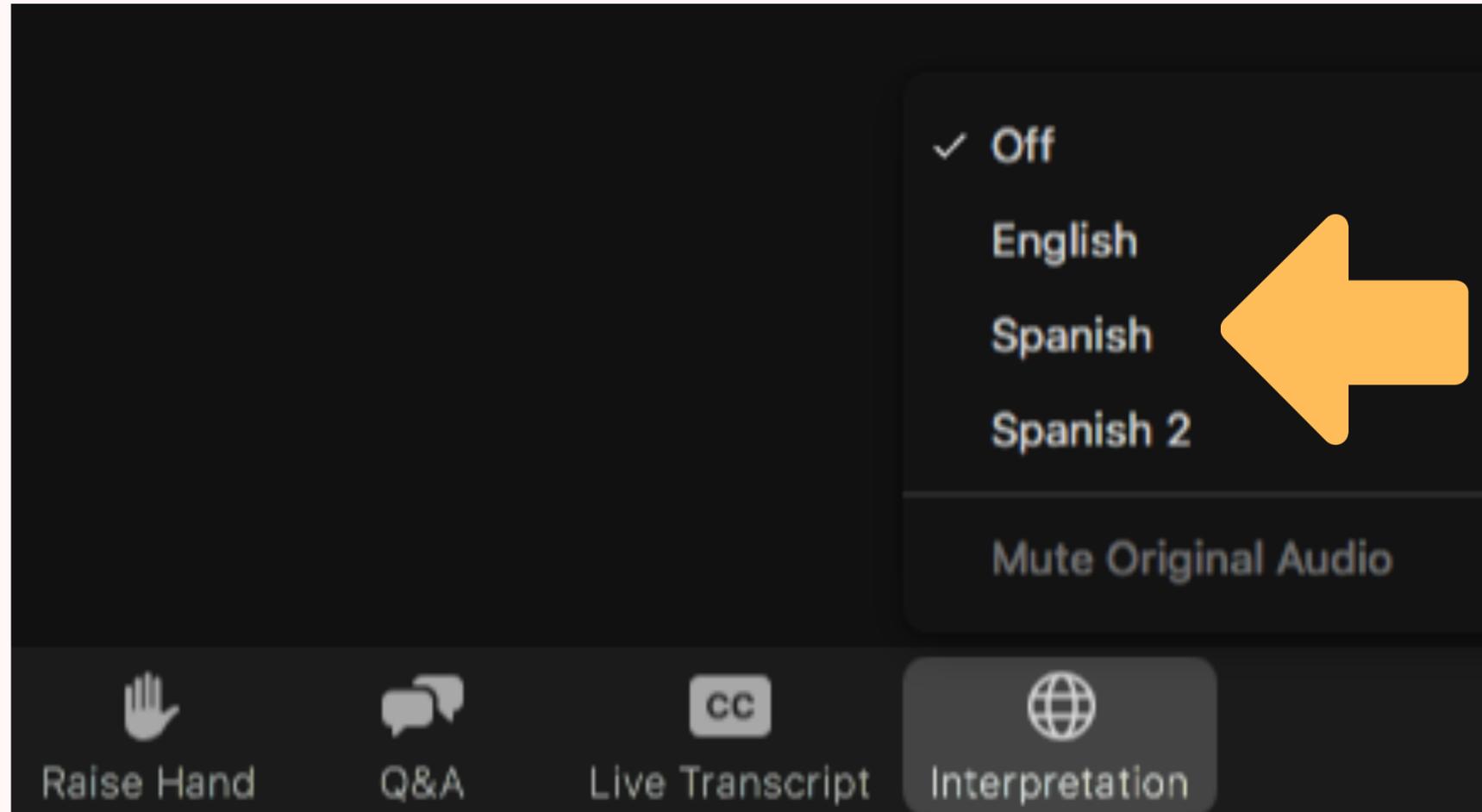
Interpretation on a computer

ترجمة عبر جهاز الكمبيوتر



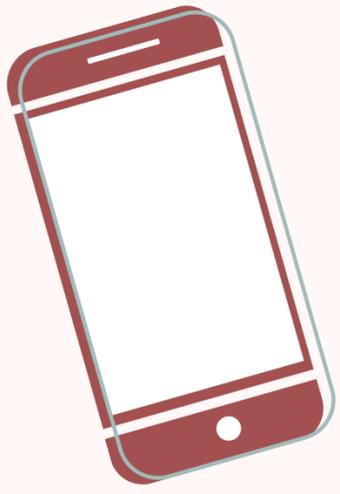
Click on the globe symbol in the bottom right corner of your screen.

اضغط على رمز الكرة الأرضية في أسفل الجانب اليمين من الشاشة.



Select the option for the language you speak.

حدد خيار اللغة التي تتحدثها.



Interpretation on a smartphone

ترجمة عبر الهاتف الذكي

Interpretation available in 2 languages.
Select language here.



Chat



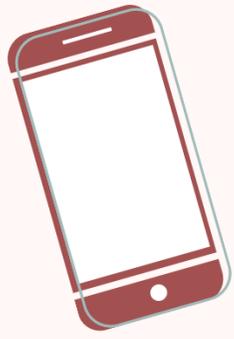
Q&A



More

Click on the three dots in the bottom right corner of your screen.

حدد الخيار باستخدام رمز الكرة الأرضية.



Minimize Webinar



Language Interpretation



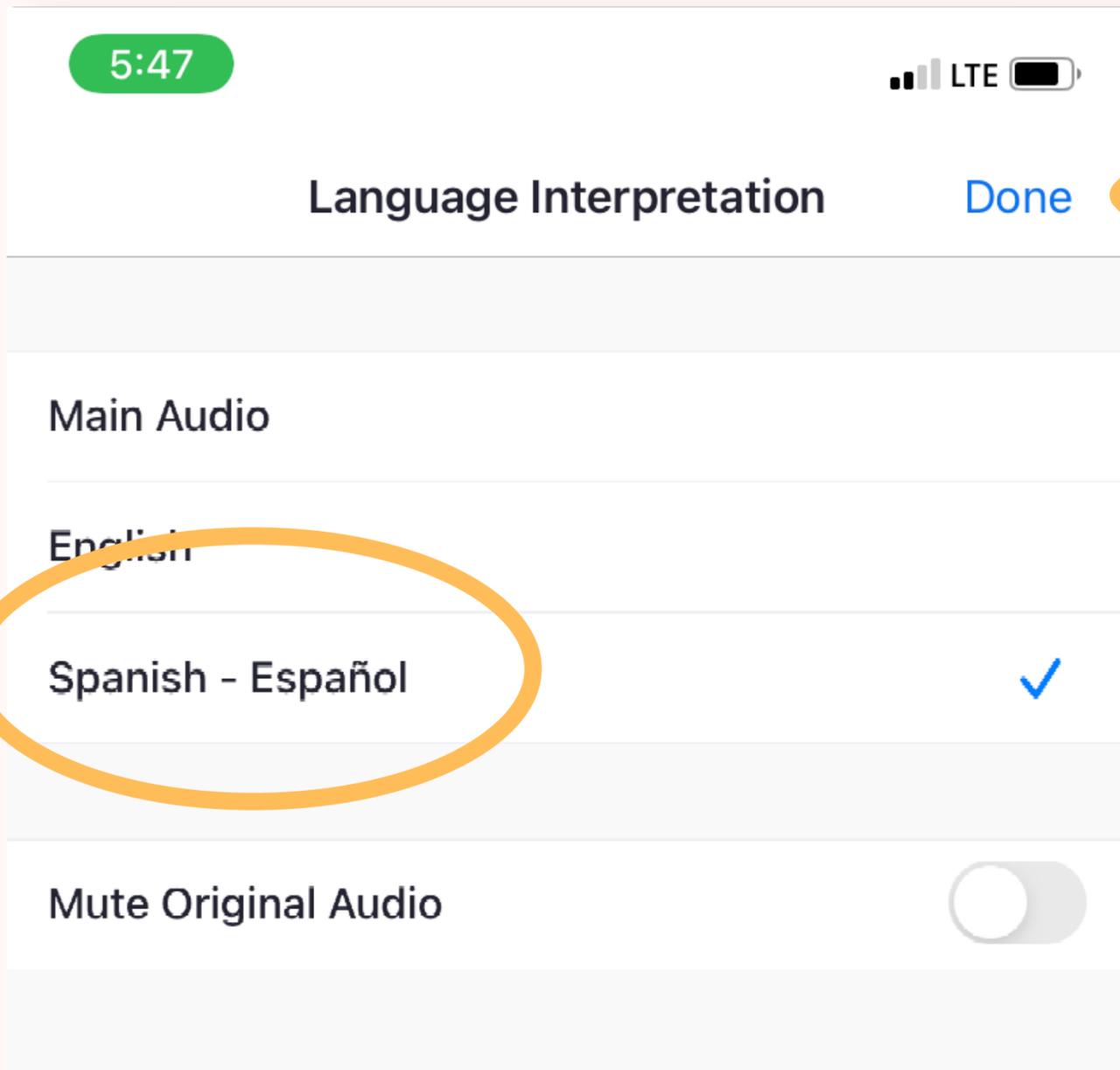
Disconnect Audio



Cancel

Select the option with the globe symbol.

حدد لغتك.



Select your language. Press "Done" in the top right corner.

إضغط على "Done" (إنتهى) في أعلى الجانب اليمين.

zoom



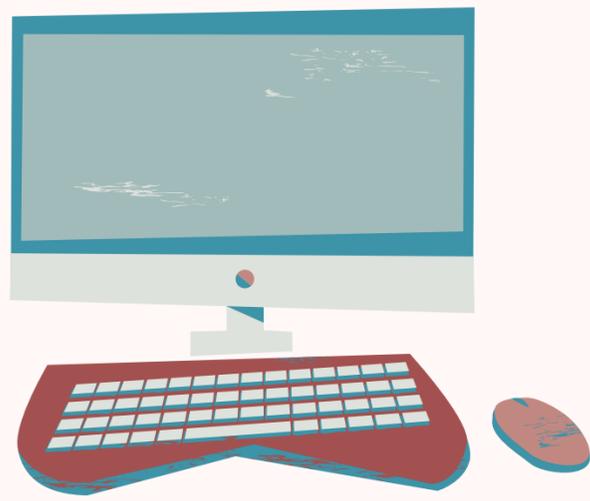
Interpretation



SOMER VIVA

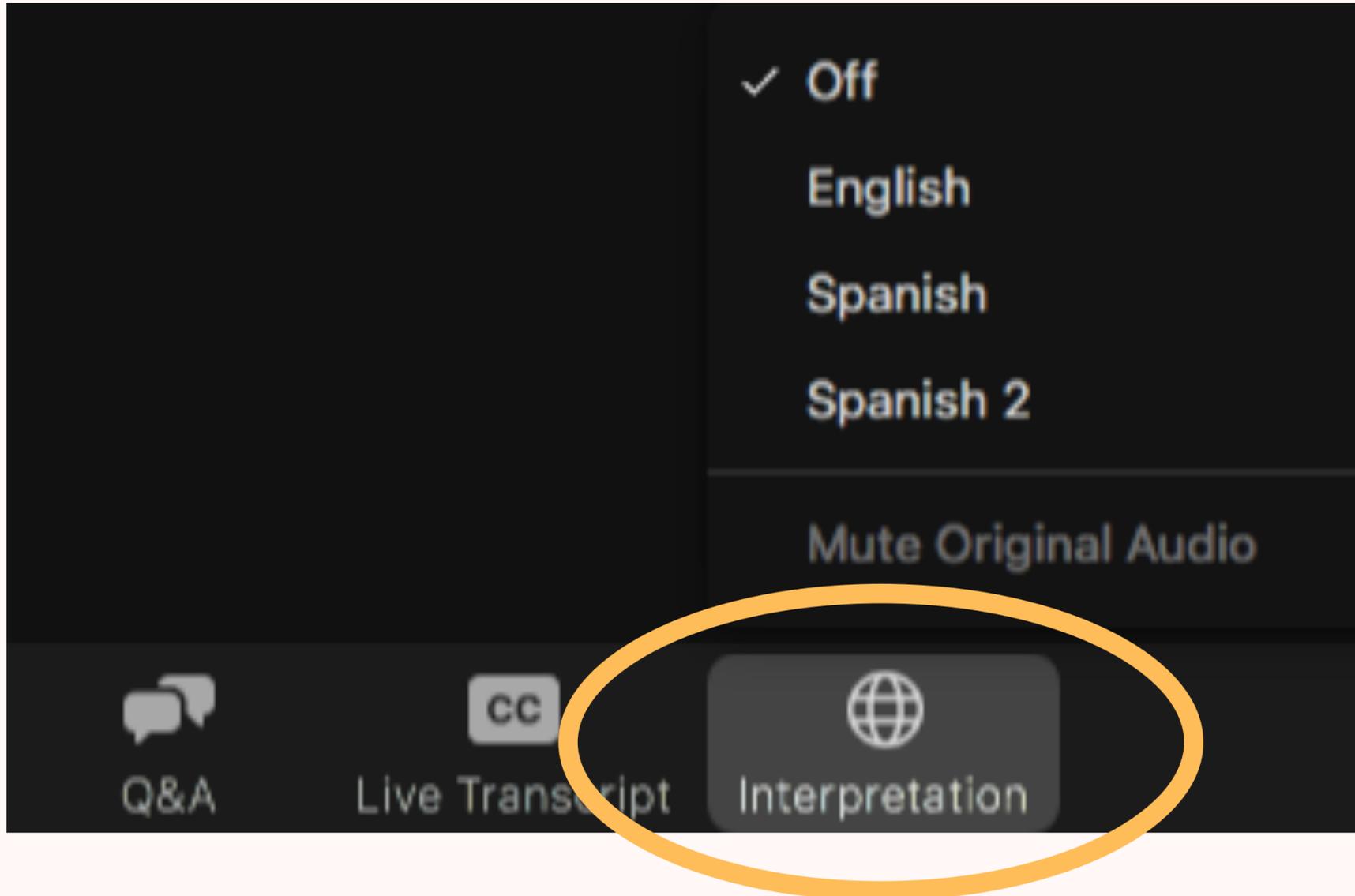
OFFICE OF
IMMIGRANT
AFFAIRS

WE SPEAK YOUR LANGUAGE
HABLAMOS SU IDIOMA
FALAMOS A SUA LINGUA
NOU PALE LANG OU
हामी तपाईंको भाषा बोल्दछौं।
我们会说您的语言



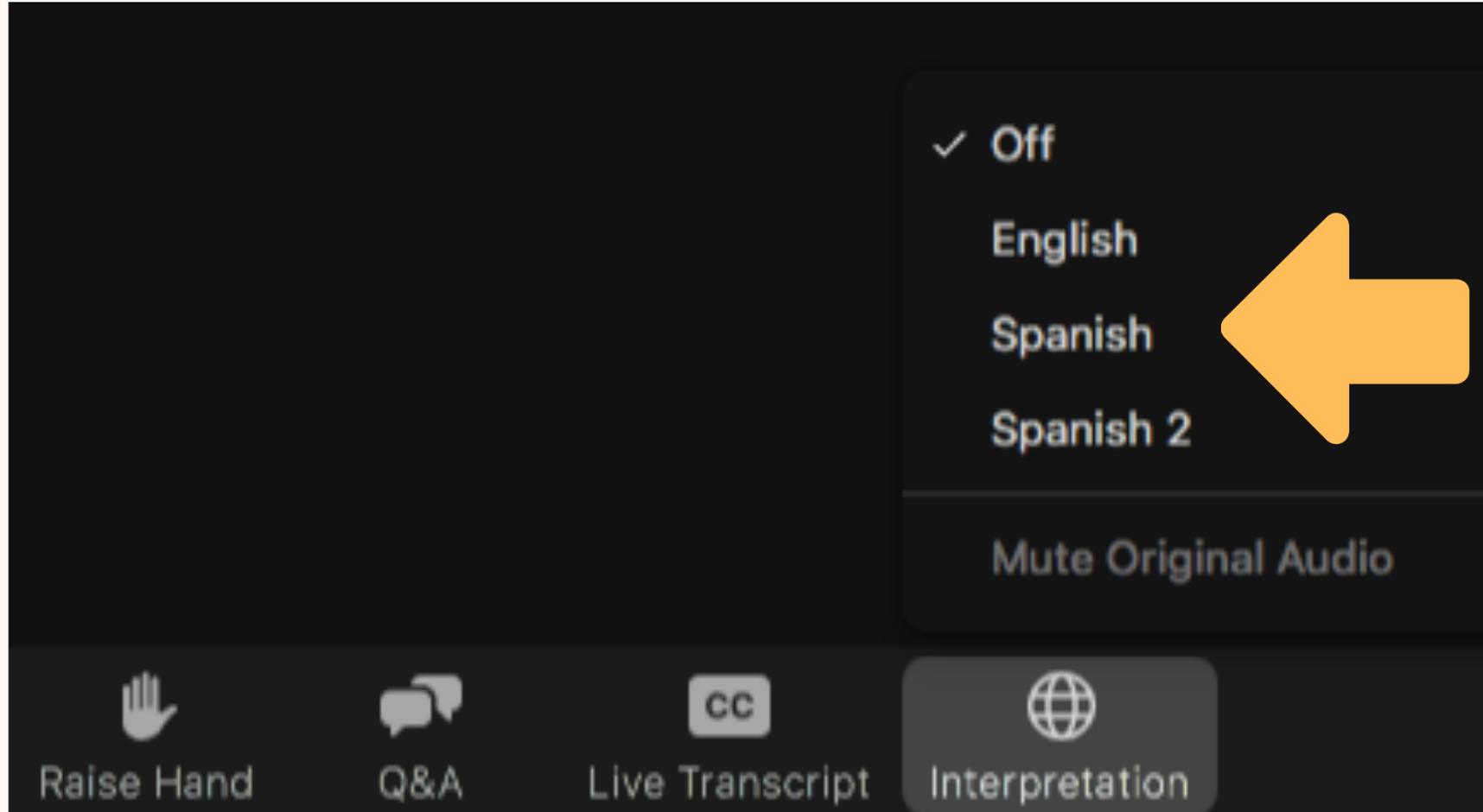
Interpretation on a computer

একটি কম্পিউটারে ব্যাখ্যা



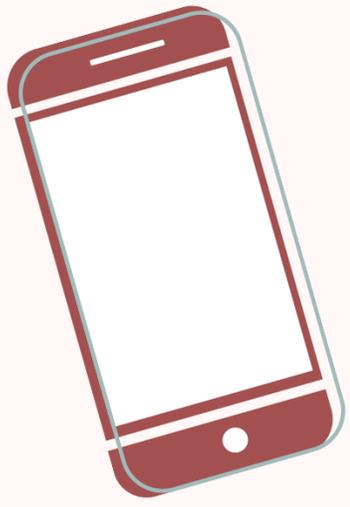
Click on the globe symbol in the bottom right corner of your screen.

আপনার স্ক্রিনের নীচের ডানদিকে কোণায় গ্লোব প্রতীকে টিপুন।



Select the option for the language you speak.

আপনি যে ভাষায় কথা বলেন তার জন্য বিকল্পটি নির্বাচন করুন।



Interpretation on a smartphone

একটি স্মার্টফোনে ব্যাখ্যা

Interpretation available in 2 languages.
Select language here.



Chat



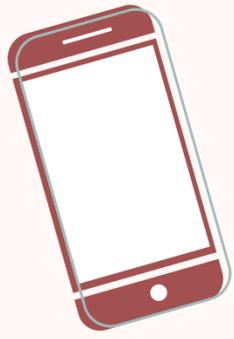
Q&A



More

Click on the three dots in the
bottom right corner of your screen.

গ্লোব চিহ্ন সহ বিকল্পটি নির্বাচন করুন।



Minimize Webinar



Language Interpretation



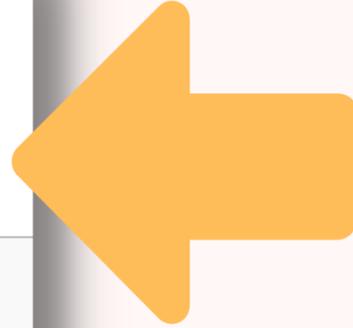
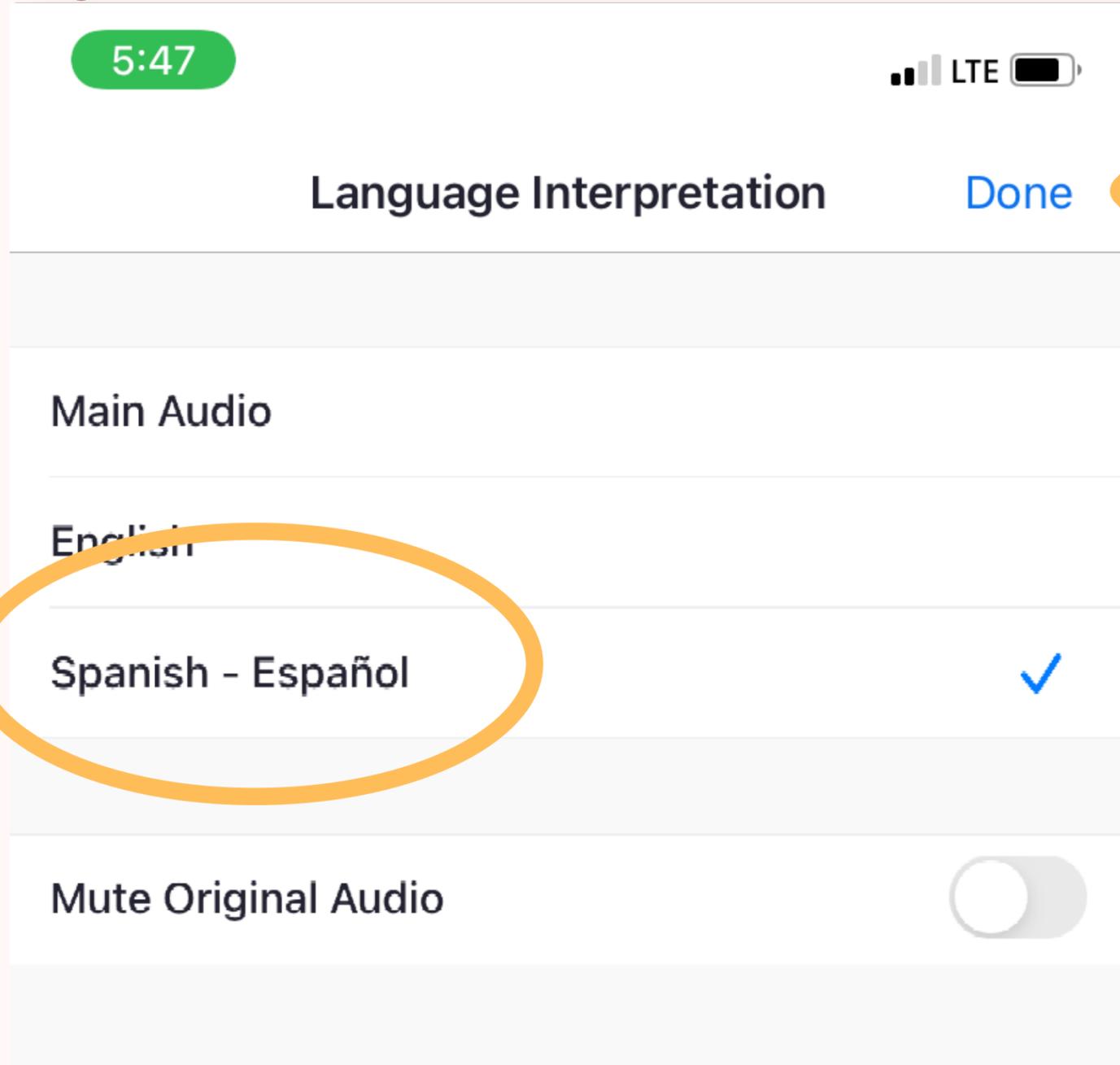
Disconnect Audio



Cancel

Select the option with the globe symbol.

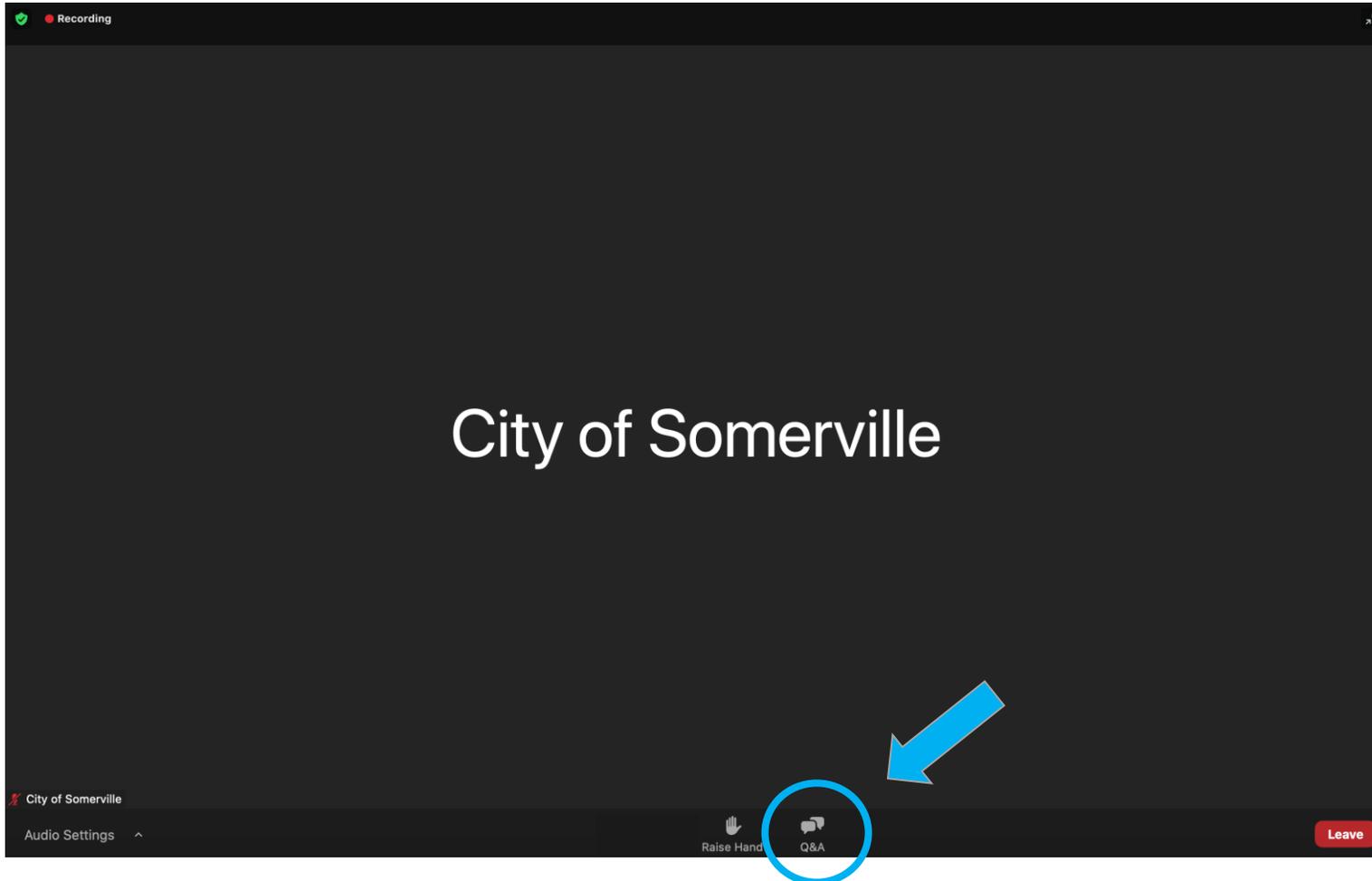
গ্লোব চিহ্ন সহ বিকল্পটি নির্বাচন করুন।



Select your language. Press "Done" in the top right corner.

আপনার ভাষা নির্বাচন করুন। উপরের ডানদিকে কোণায় "Done" টিপুন।

How to Use Zoom's Q&A Function



Type your question in the bottom of the Q&A window. Click "Send" to submit your question

Welcome to Q&A

Questions you ask will show up here. Only host and panelists will be able to see all questions.

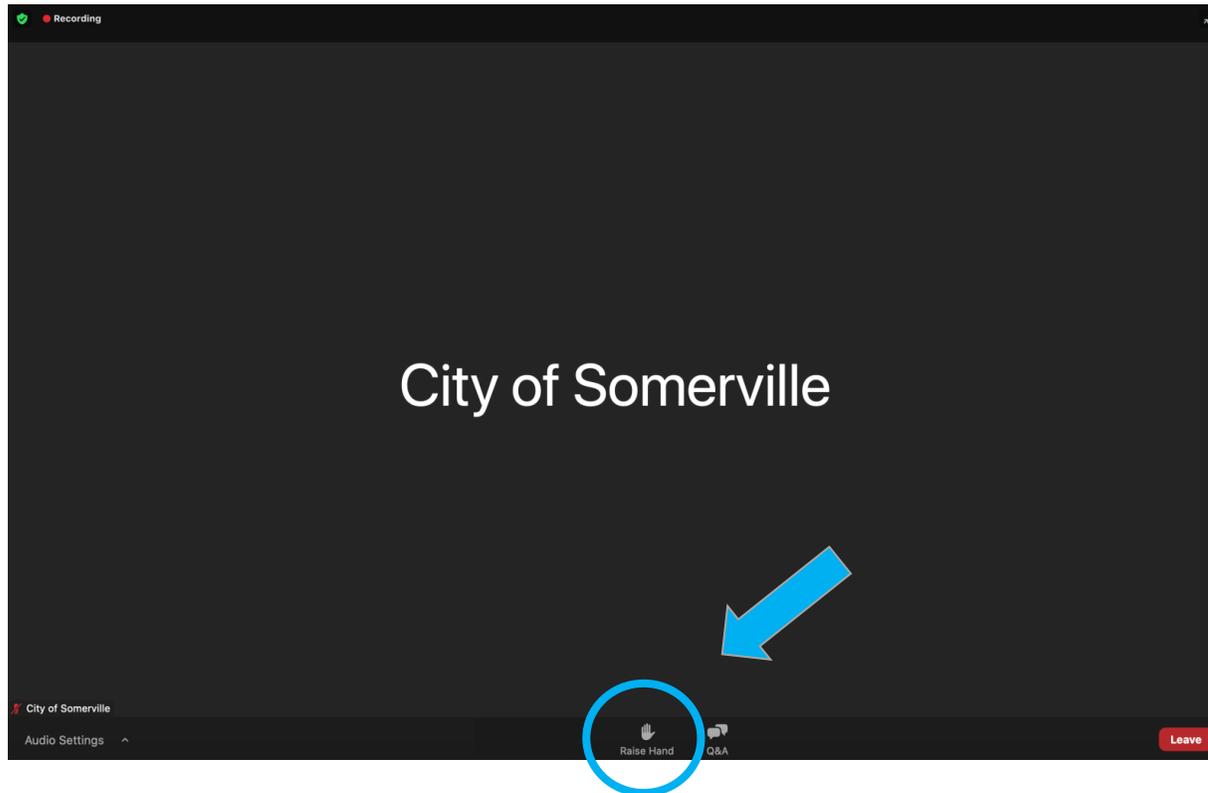
How do I send a question using the Q&A function?

Send anonymously

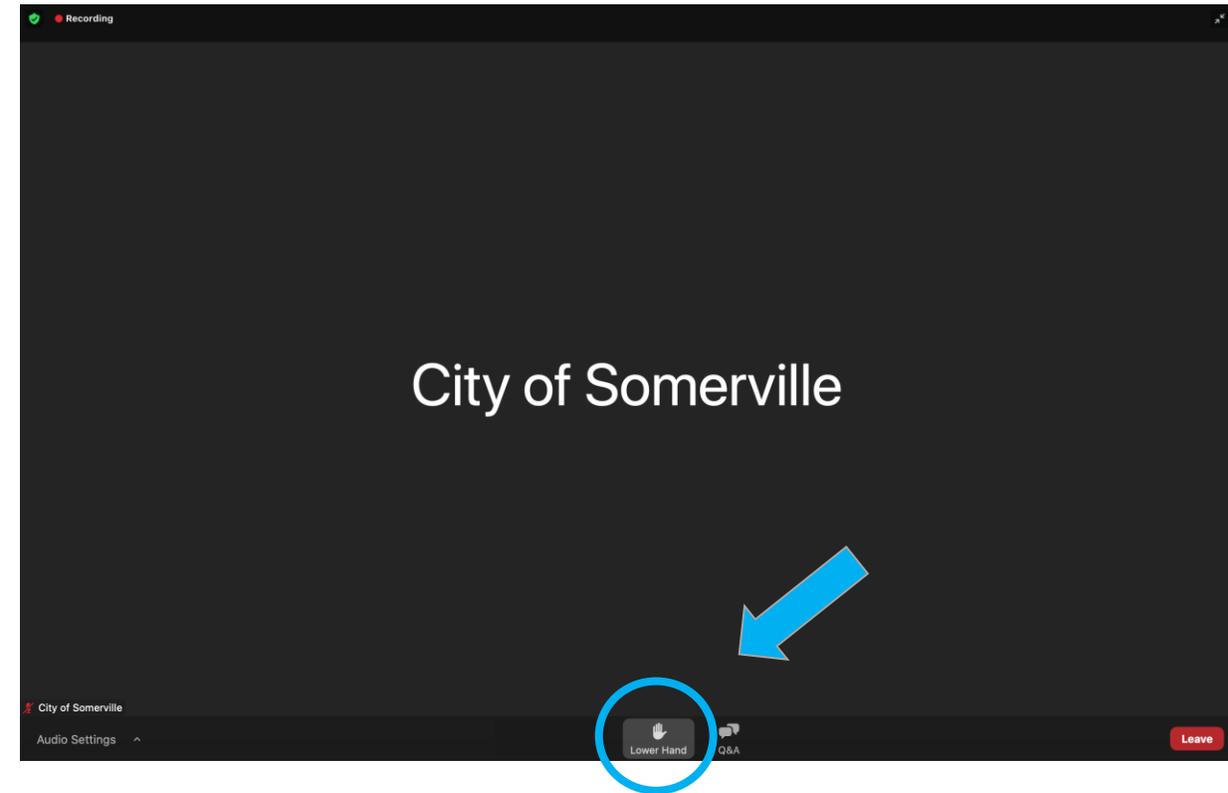
Click the "Q&A" button in the webinar controls bar

How to Raise Your Hand to Ask a Question

Click the “Raise Hand” button on the webinar controls toolbar



When your question has been answered, click “Lower Hand”



If you are experiencing technical difficulties, please call: 617-652-0560

**If you are calling in: Dial *9 to raise your hand
Dial *6 to unmute and mute**

Agenda

1. **Welcome and Introductions (15 minutes)**
2. **Combined Sewer Overflow Planning Background (10 minutes)**
3. **Goals and Priorities (5 minutes)**
4. **Clarifying Questions (10 minutes)**
5. **Discussion on the “Typical Year” Development (15 minutes)**
6. **Audience Survey (5 minutes)**
7. **Question and Answer / Community Feedback Session (1 hour)**

Meeting Guidelines

- The meeting is being **recorded**.
- **Q&A function** is enabled for questions and any **technical issues** you might experience.
- You may **type questions** at any time using the Q&A feature.
- Please **raise your hand** if you wish to ask *questions*.
- Please limit your questions to **1 minute** per person so that we can hear from as many people as possible.

Please pace your speech to allow our interpreters time to translate.

A blurred background image of an audience with several hands raised, suggesting a poll or interactive session. The image is overlaid with a semi-transparent white horizontal band.

Audience Poll

Getting to Know You

Where do you live?

- a. Arlington
- b. Boston
- c. Cambridge
- d. Everett
- e. Medford
- f. Somerville
- g. Other



Combined Sewer Overflow Planning Background

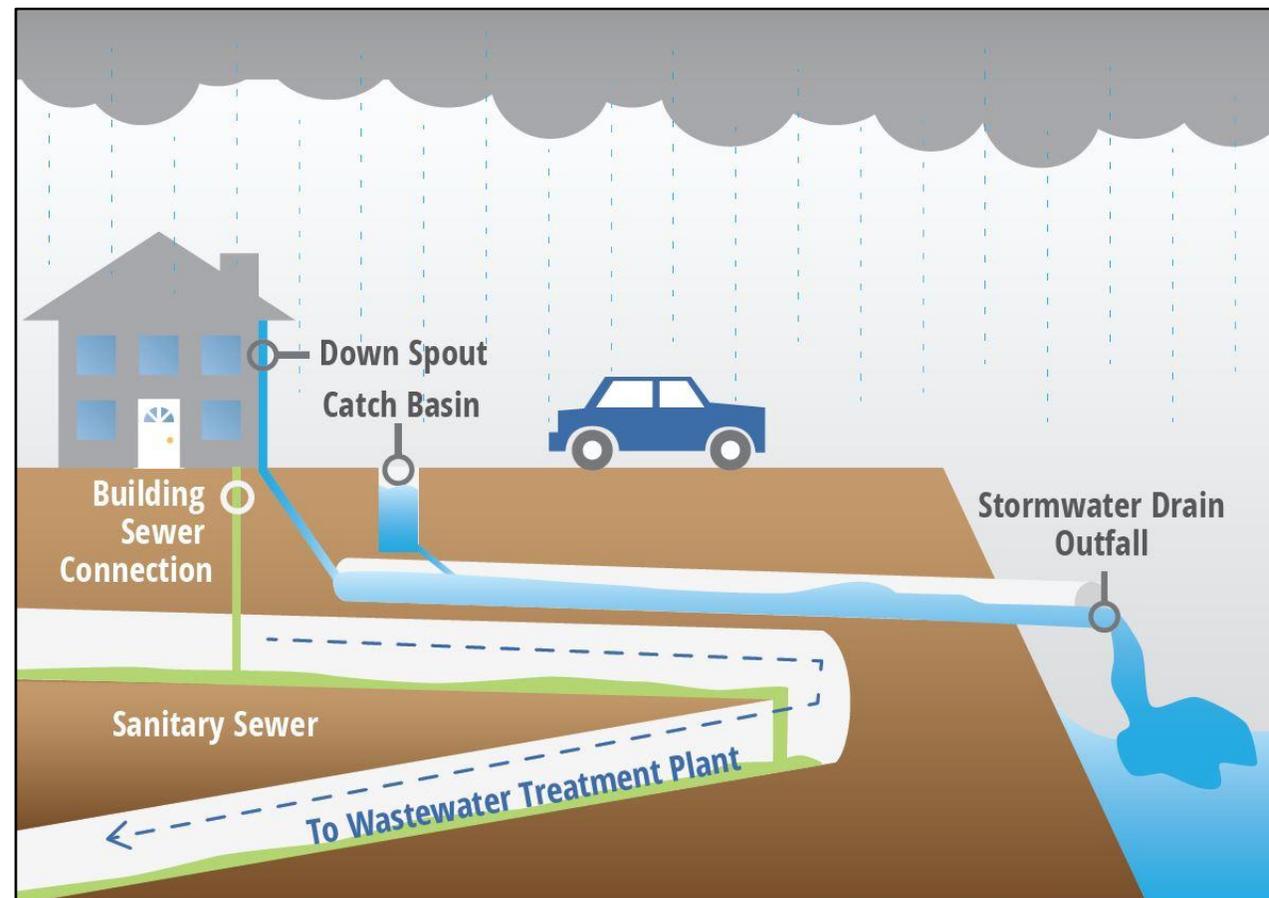
Presented by: Rich Raiche – City of Somerville

What is a Separate Sewer System?

Two dedicated networks of pipes: one for sanitary flows, and one for stormwater flows.

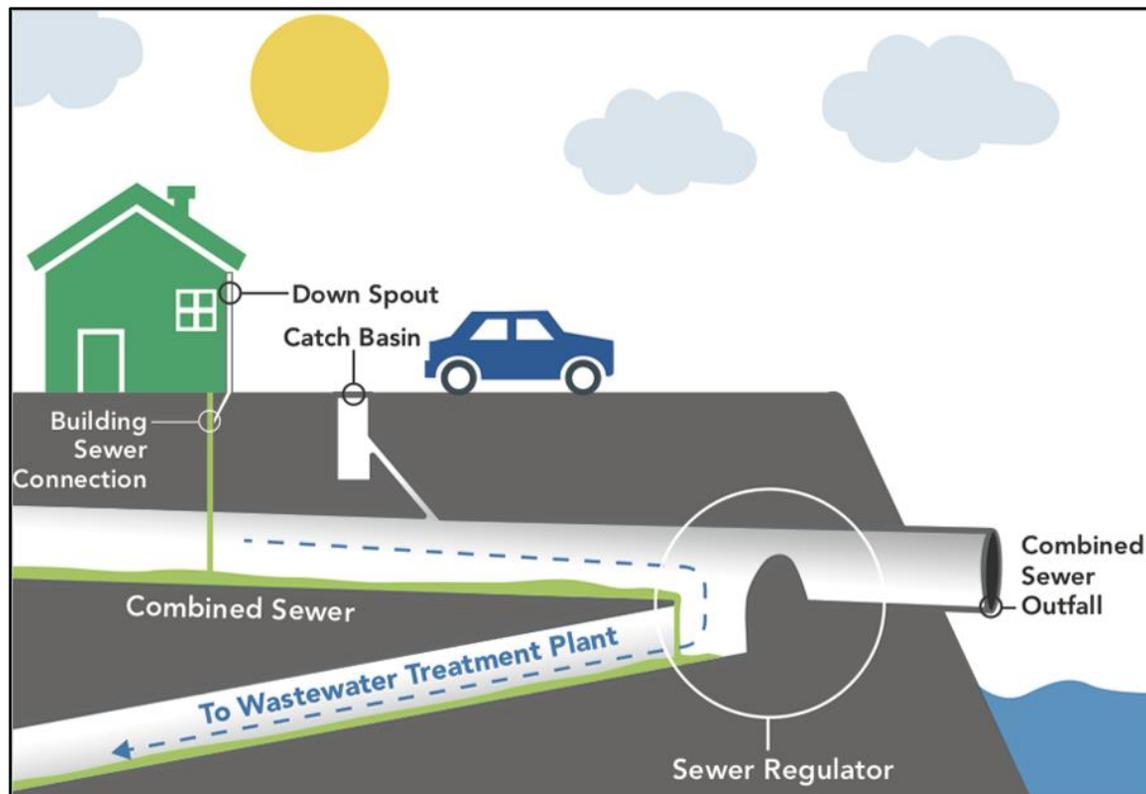
Residential sewage and industrial wastewater is conveyed to the Deer Island facility for treatment.

All stormwater runoff is discharged to the Alewife, Charles and Mystic Rivers.

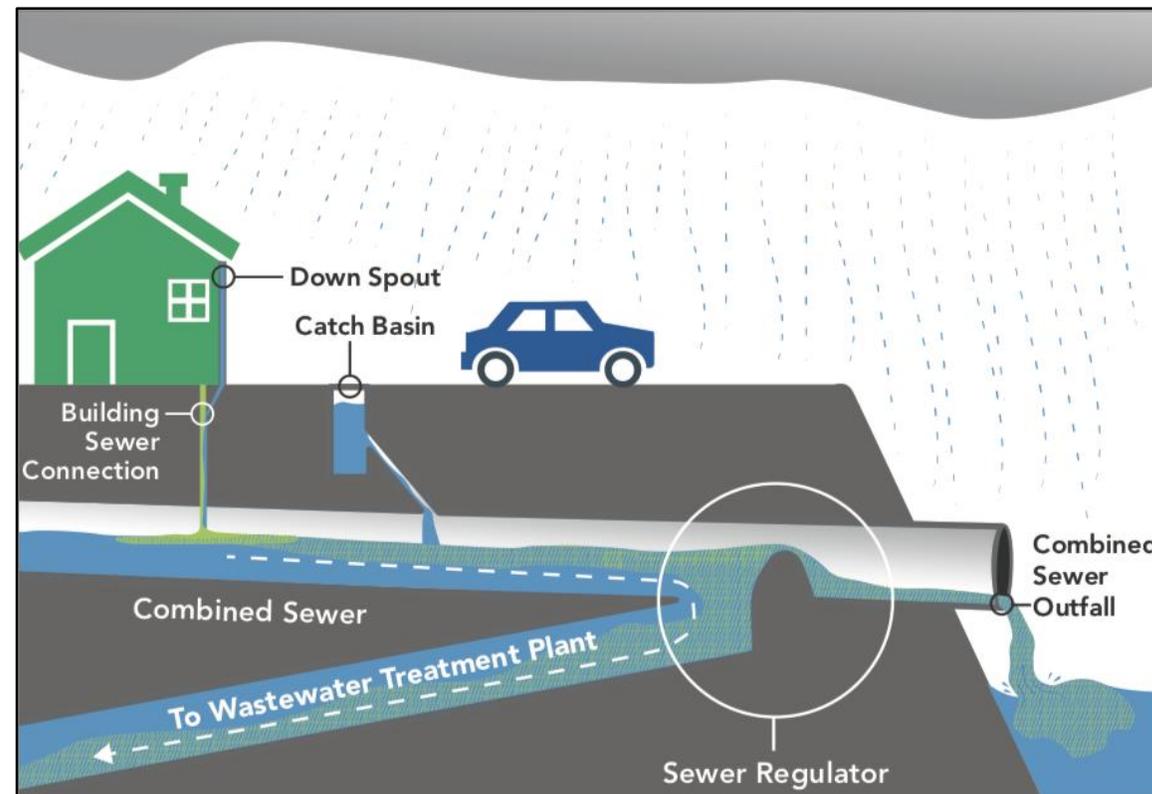


What is a Combined Sewer System?

One network of pipes for both sanitary and stormwater flow.



All sanitary flow and stormwater from most storms is moved to the Deer Island Wastewater Treatment Facility.



Occasionally, **excess flow during heavy rain** can cause a combined sewer overflow (CSO) into rivers.

Why are Combined Sewer Overflows Permitted?

When heavy rain overwhelms the combined system, discharges to neighborhoods and buildings occur.



Sanitary Sewer Overflows (SSOs) release sewage in neighborhoods and contribute to local flooding.



System backs up and discharges to basements and garden-level apartments.

CSOs provide controlled relief at known locations to better manage the hazards of a combined system.

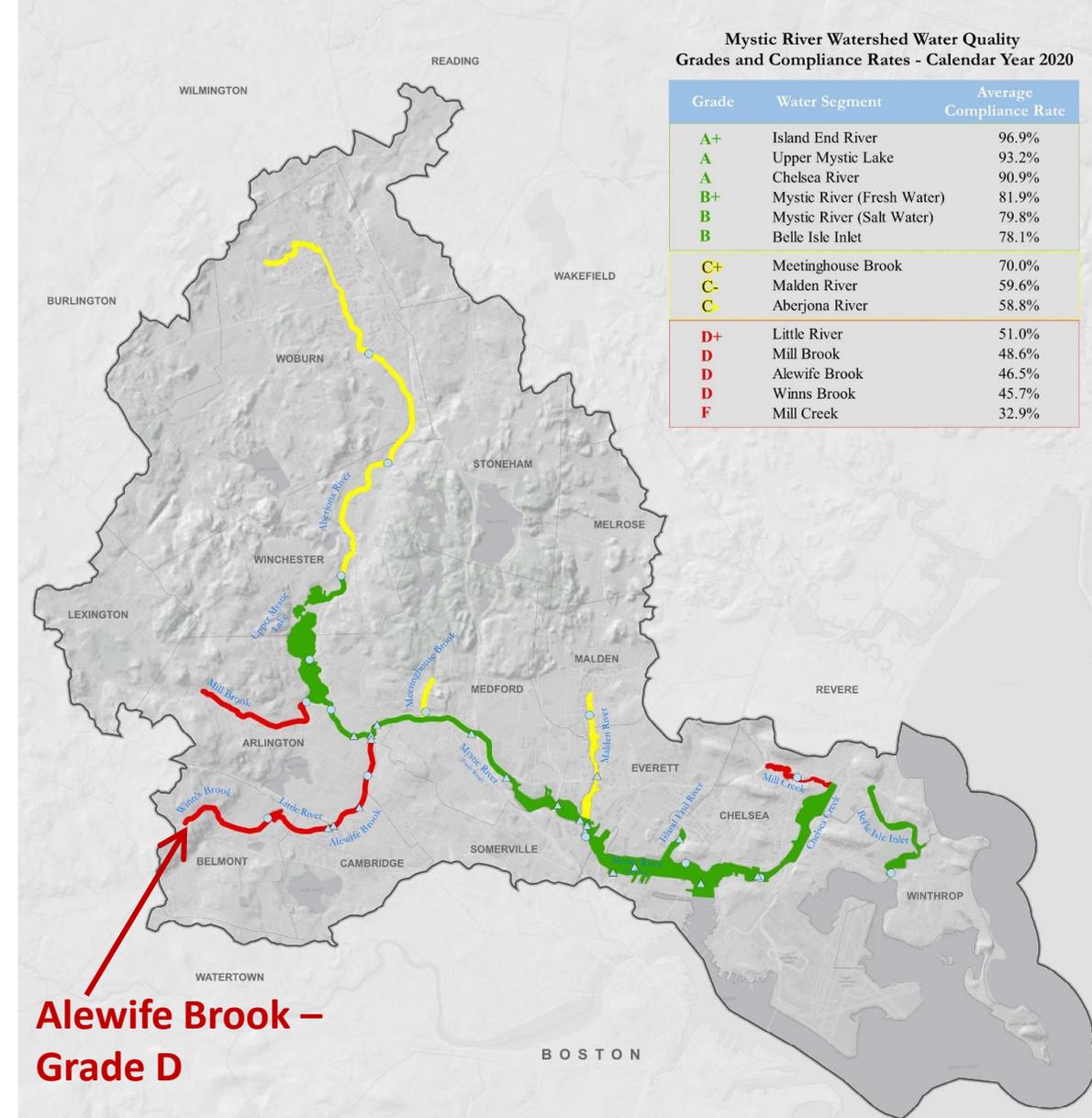
How do CSOs Impact the Environment?

During large storms, CSOs discharge to the Alewife, Charles & Mystic Rivers.

CSOs are mostly stormwater but do contain sanitary wastewater, and discharge bacteria, nutrients, and other pollutants into waterways.

This can impact water quality and river use during and immediately following those heavy rain events.

CSOs do not cause flooding but they do impact stormwater water quality. Stormwater from separated systems causes flooding and also impacts water quality.



Alewife Brook – Grade D



Data Sources: Mystic River Watershed Association, U.S. EPA, Massachusetts Water Resources Authority, MassGIS. Basemap: Canva/World Light Gray Base © ESRI and its data suppliers. EPA Region 1 GIS Center map #13390, 7/14/2021

How do CSOs & Stormwater Pollution Impact You?

CSOs and stormwater discharges can impact your communities during and after storm events by:

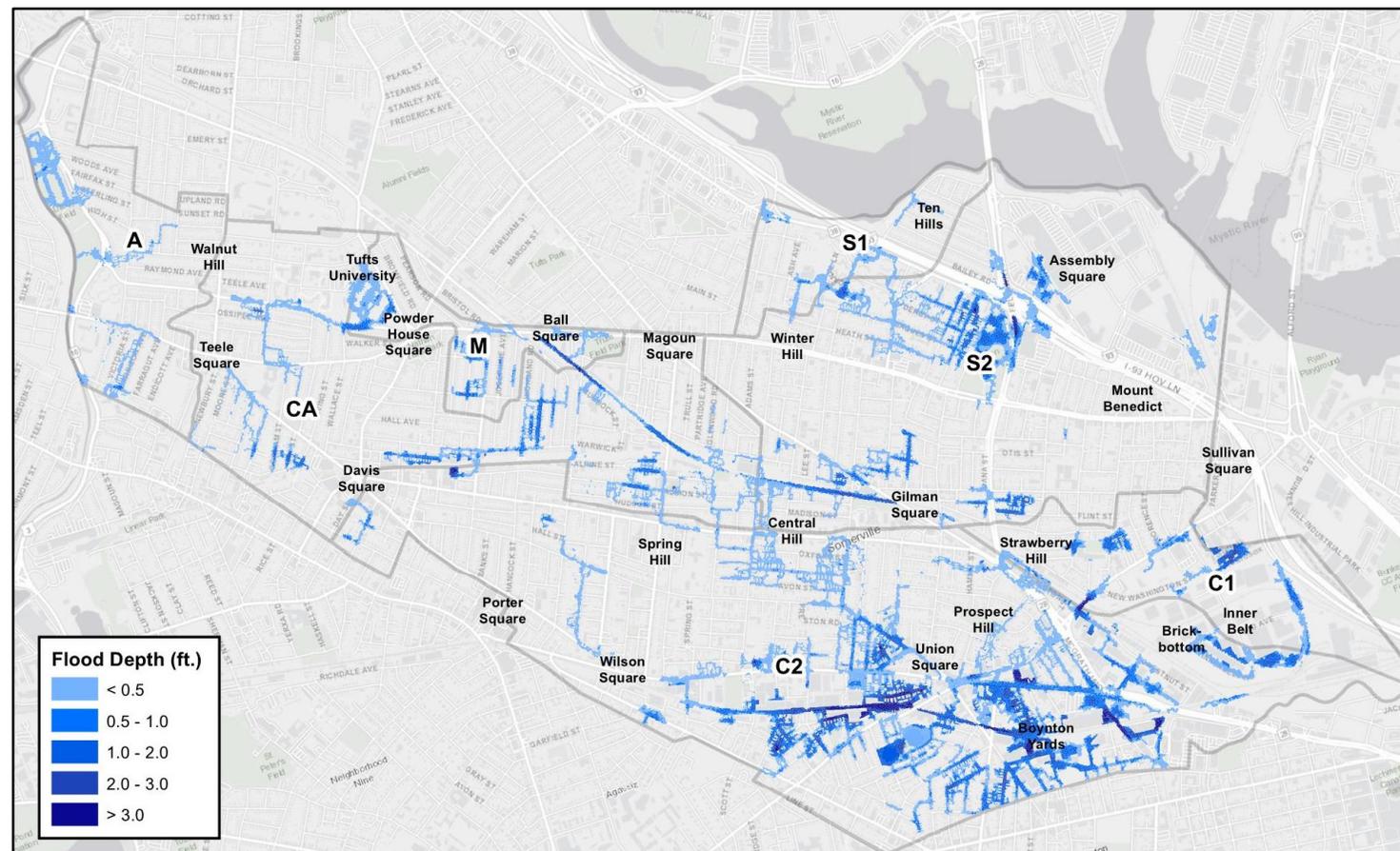
- Making rivers unsafe for swimming or fishing
- Impacting appearance - debris, oil slicks, odor



The Impact of Climate Change

As our climate continues to change, more intense rainfall will make flooding and CSOs worse in the region.

- *For more information, refer to the Cambridge and Somerville websites and reports*





Control Plans Goals & Priorities

Presented by: Brian Kubaska – Massachusetts Water Resources Authority

What is a CSO Control Plan?



The Planning Process

Assess Conditions

1. Present Day
2. Future
3. **Develop a Typical Year**

Develop Plans

Develop Combined Sewer System Control Plans including alternatives that use information from assessment and engagement

Submit Final Plans**

Initial Schedule**:

- Draft Plan: June 2023
- Final Plan: December 2023

***We requested a schedule extension*

The Planning Process



- Up to 7 Public Meetings at major milestones
- MA Environmental Policy Act (MEPA) Review
- Flyers, Fact Sheets, and Public Events
- Stakeholder Interviews

Feedback from public engagement will be used in all stages of the planning process.

***The schedule extension will allow more time for:*

- 1. Incorporating climate change into the updated Typical Year,*
- 2. A thorough MEPA review, and*
- 3. An in-depth alternative analysis*

- **Goals** – specific objectives to be achieved by the CSO Control Plan recommendations.
What is the purpose of this planning process?
 - Develop a **new Typical Year** to reflect future climate conditions
 - Develop, assess, and select **alternatives for decreasing / eliminating CSOs**
 - Identify **alternatives to improve water quality** in the Charles River, Mystic River, and Alewife Brook
 - **Engage with the community** throughout the planning process
 - Consider and address impacts of CSOs on **Environmental Justice** communities

- **Priorities** – important issues to be incorporated into the development of alternatives.
How do we optimize resources through the planning process to address goals and priorities?

We want to hear from you!



Clarifying Questions and Answers

Introducing the Technical Experts

Lead Author: Indrani Ghosh, Ph.D.
Senior Technical Leader, Weston & Sampson

Lead Reviewer: Arthur DeGaetano, Ph.D.
Professor, Earth and Atmospheric Sciences Department,
Cornell University

Typical Year Development

*Presented by: Dr. Indrani Ghosh – Weston and Sampson
(on behalf of the City of Cambridge)*



What is a “Typical Year”?

A **Typical Year** is a full year of rainfall data that best represents rainfall conditions over a period of time.

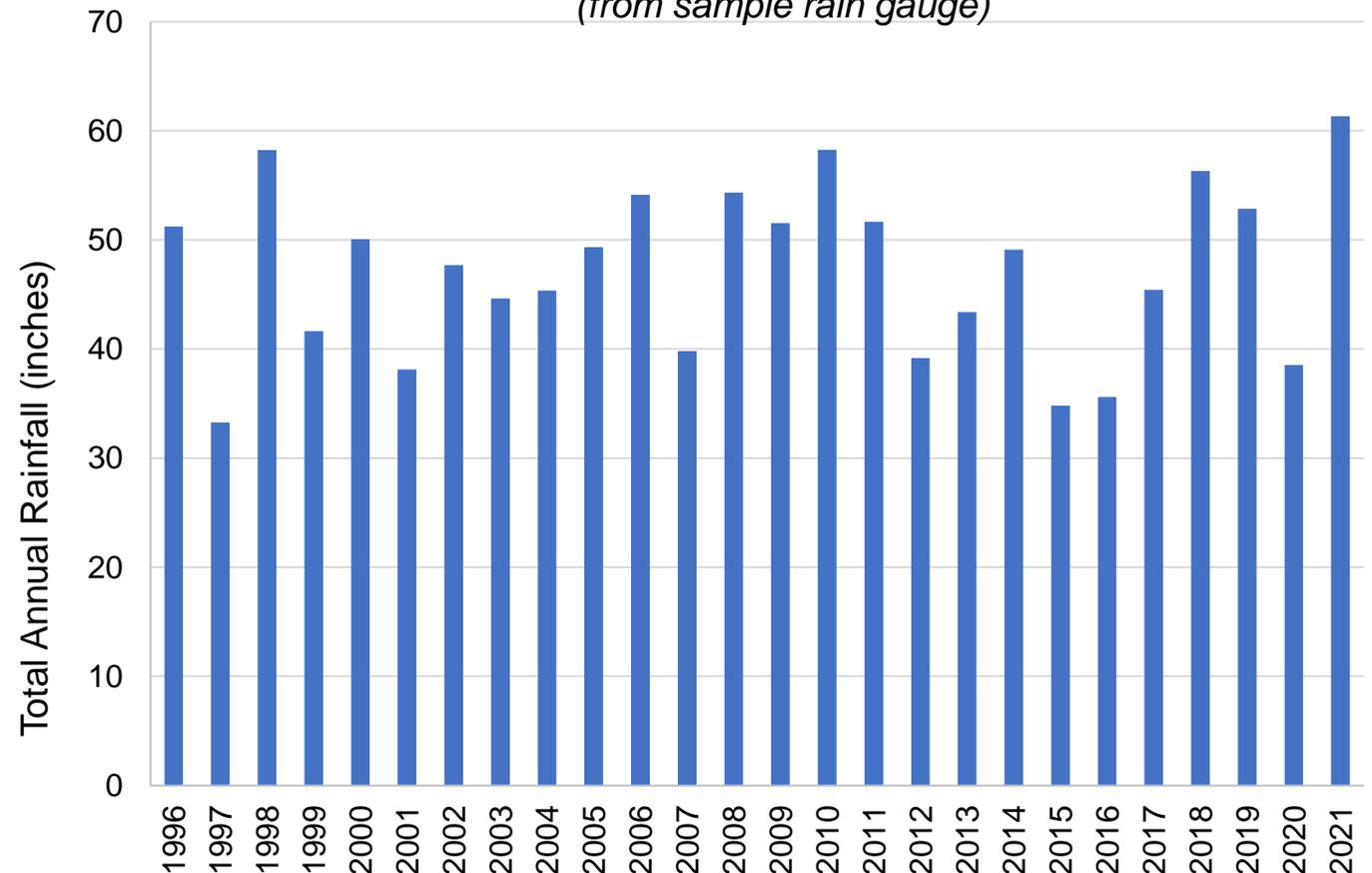


Why Develop a Typical Year?

Required by EPA's CSO Control Policy requirements:

- Rainfall fluctuates from year to year, and we need to find a representative "average" year for planning, using statistics and the **best available rainfall data**.
- Test the performance of CSO controls during rain events on an **annual average** basis.

Example Statistic: Observed Annual Rainfall
(from sample rain gauge)



How is the Typical Year Used?

Used throughout the CSO control planning process

- During Development:
To identify and test alternatives.
- During Implementation:
Sets a **benchmark** to measure and assess progress.

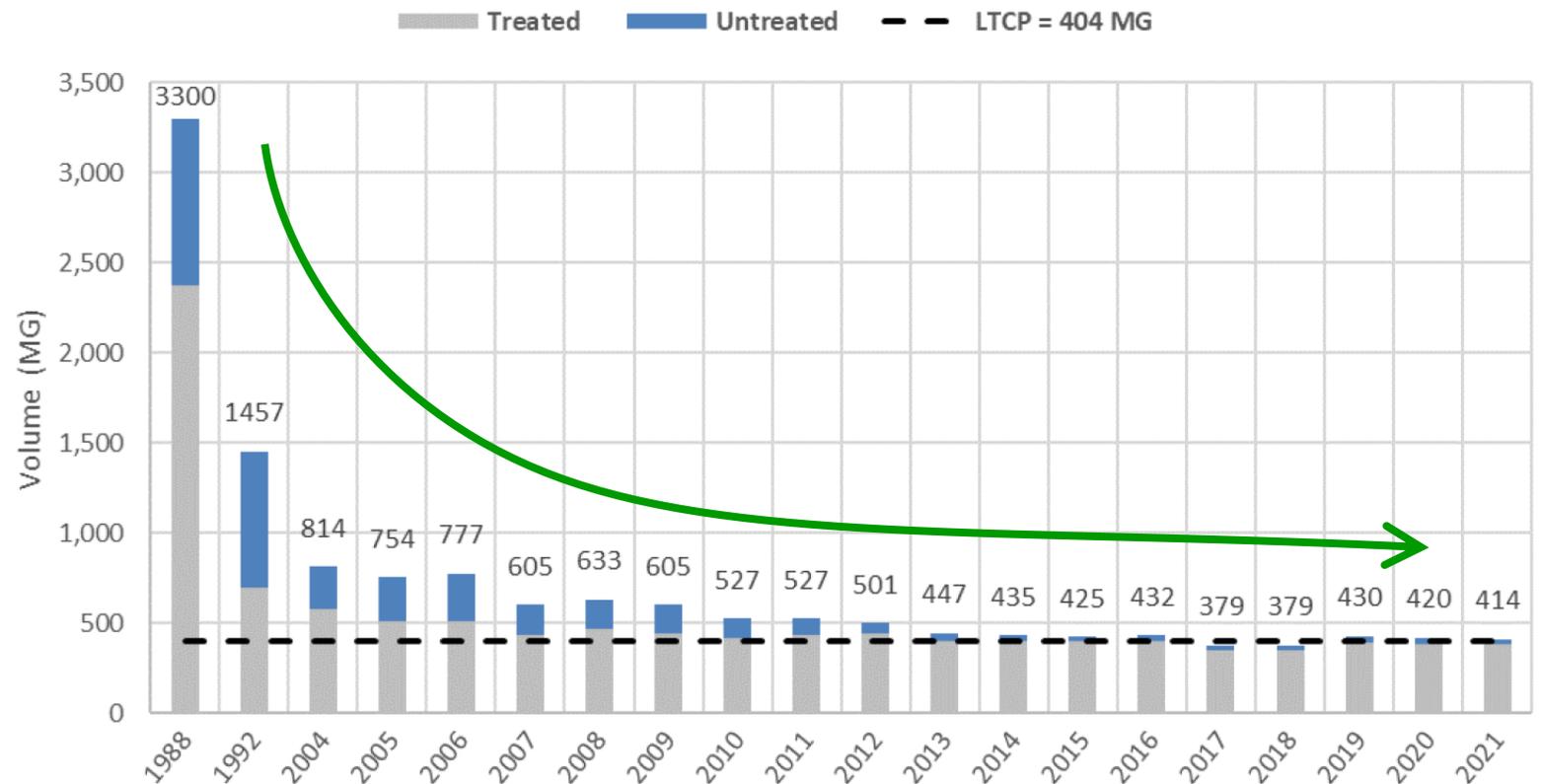
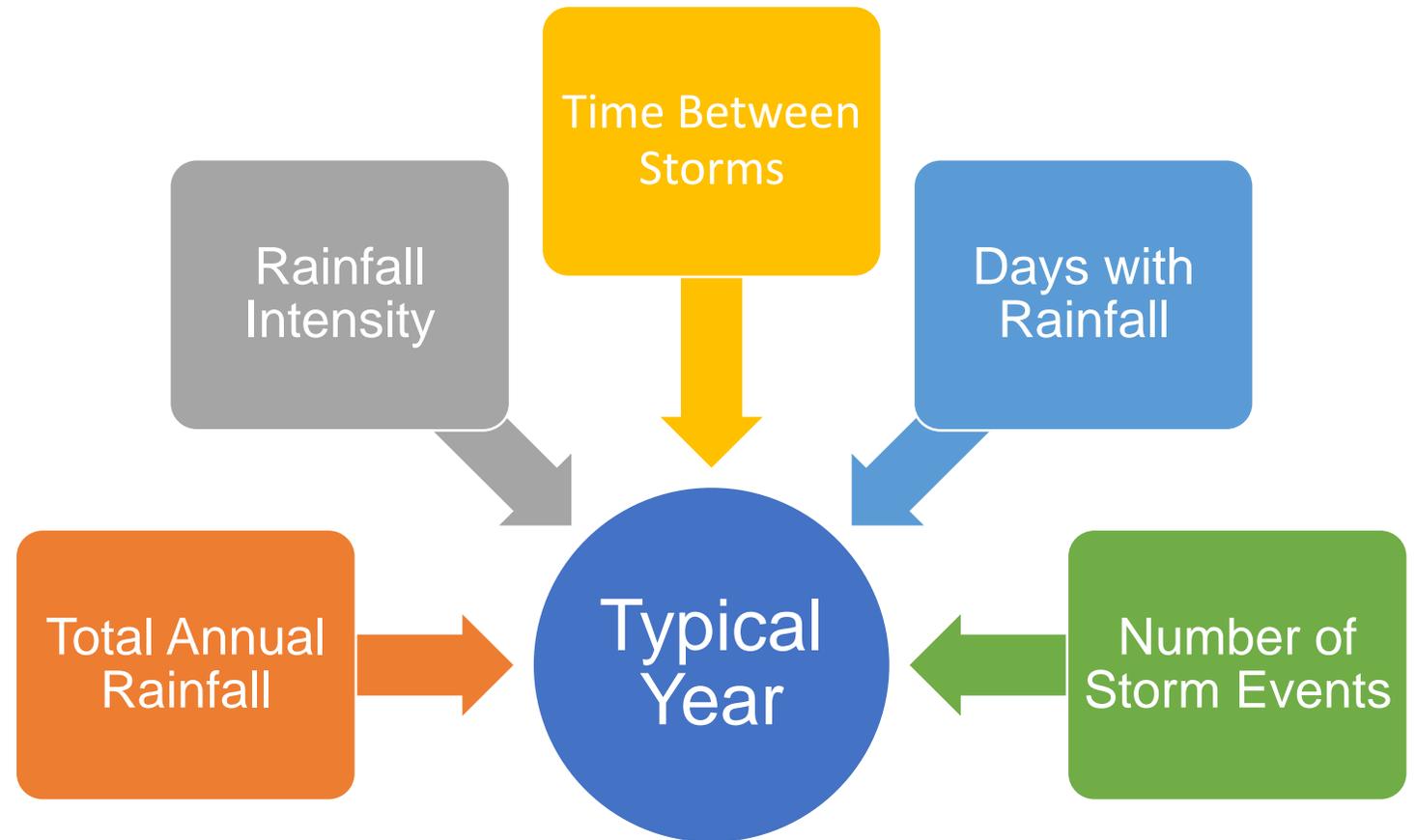


Figure 1-1. Estimated Treated, Untreated and Total CSO Volume in the Typical Year, 1988-2021.

How is the Typical Year Developed?

- **Data-driven** process analyzing rainfall patterns to identify the best match year.
- Uses **real data to assess alternatives** and measure performance.



❖ For more information, refer to the Typical Year Technical slides at the following website: <http://www.cambridgema.gov/csoPlanning>.

Considering Climate Change

- This CSO Control Plan Update process is unique because the Typical Year used will consider **future climate change projections, including higher intensity rainstorms.**

Currently, there is no EPA/DEP guidance to develop a **Future Typical Year**



Image Source: <https://patch.com/massachusetts/somerville/weather>

Developing a Future Typical Year

- This is a **first of its kind** approach,
- Involves **collaboration with leading climate scientists**, and
- Is **consistent with the Massachusetts Climate Resilience Design Standards**.

❖ *For more information, refer to the Typical Year Technical slides at the following website:*
<http://www.cambridgema.gov/csoPlanning>.

Identified the Future Period (2040-2069)

Assessed two Greenhouse Gas (GHG) Emissions Scenarios

Analyzed multiple Global Climate Models (GCMs)

Compared Results to Observed Rainfall Data

Identified 2050 Future Typical Year for use in Updated CSO Control Plans (in-progress)

Developing a Future Typical Year

- ✓ Planning ahead to 2050, (Analyzing 2040-2069)
- ✓ Comparing 2 Greenhouse Gas (GHG) Emissions Scenarios
- ✓ Using 11 Global Climate Models
- ✓ Analyzing rainfall patterns across the region

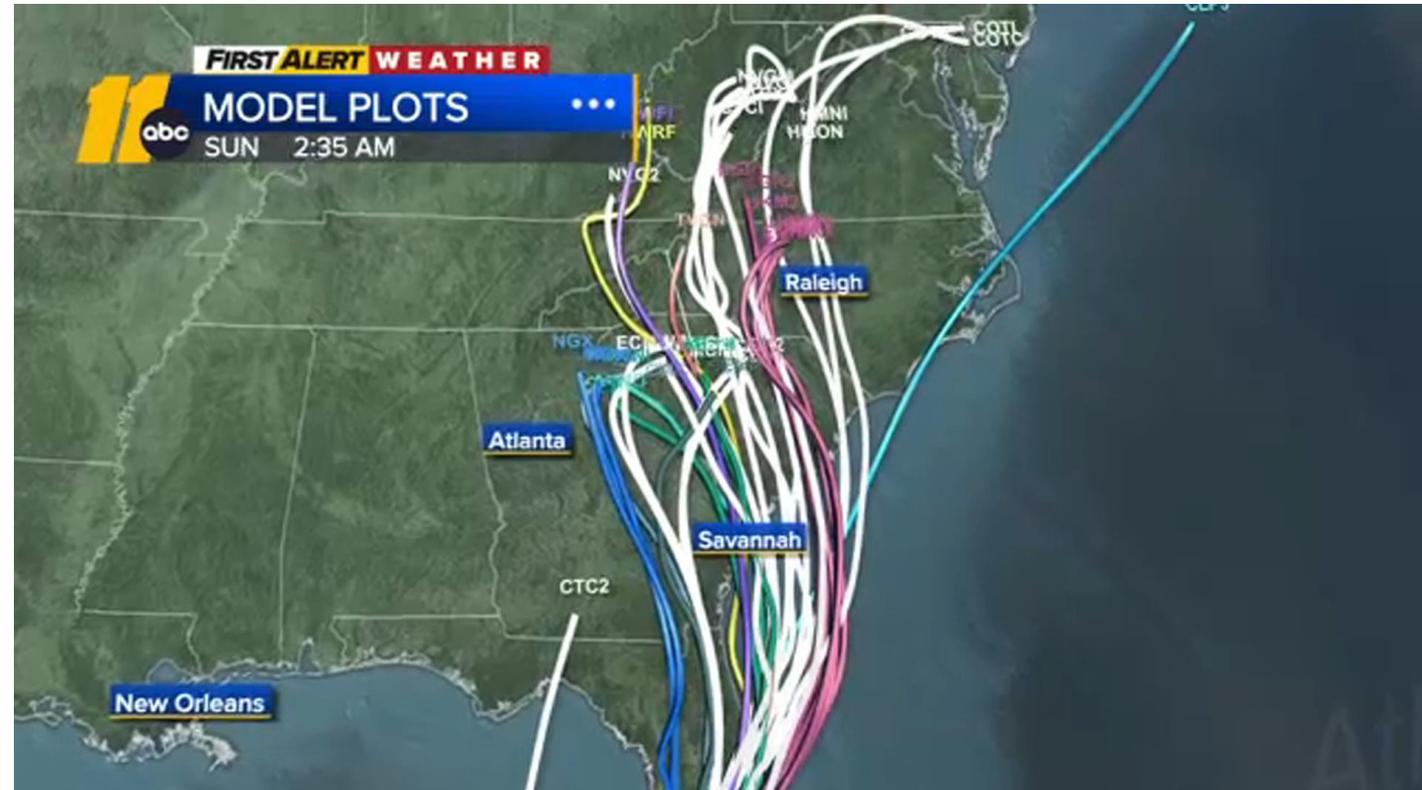


Image Source: <https://abc11.com/hurricane-tracker-ian-in-nc-impact-update-florida/12274760/>

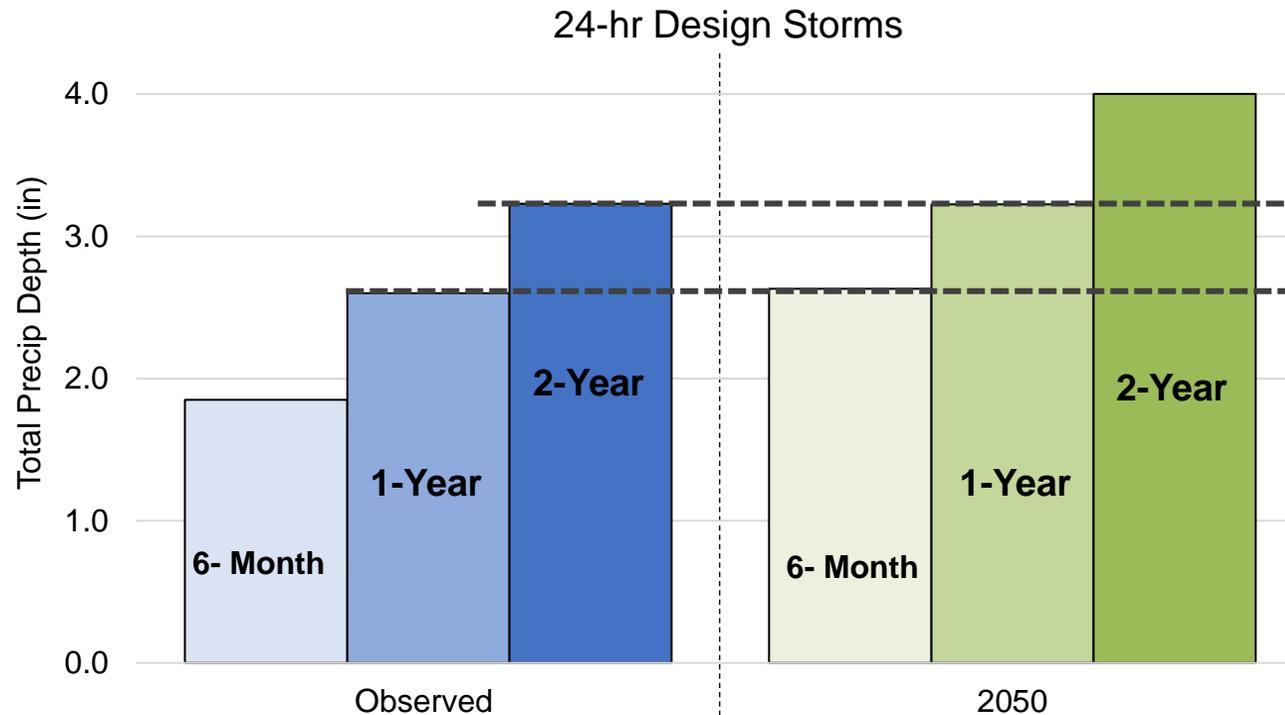
Preliminary Findings

Observed (1996-2021)

Average annual rainfall:
47.1"

Future (2040-2069), RCP8.5

Average annual rainfall: ← From a Sample Gauge
49.5"



The storms of today will likely occur **more frequently** in the future.

Next Steps

- Finalize the Future Typical Year.
- Use the Future Typical Year to identify CSO mitigation alternatives.
- Refine CSO mitigation alternatives using design storms.

❖ For more information, refer to the Typical Year Technical slides at the following website: <http://www.cambridgema.gov/csoplanning>. Please provide all comments by January 5th, 2023.

Audience Survey

Please complete the survey by Thursday, January 5, 2023

tinyurl.com/CSOplansurvey



Questions & Feedback

1. By January 5th, 2023, submit comments using the Survey:

tinyurl.com/CSOplansurvey



2. After January 5th, 2023, submit questions, comments, and feedback via email (include "**CSO Control**" in the subject):

- *Cambridge*: Catherine Woodbury - cwoodbury@cambridgema.gov
- *Somerville*: Lucica Hiller - lhiller@somervillema.gov
- *MWRA*: Brian Kubaska - Brian.Kubaska@mwra.com